HOW DOES PERSONALITY RELATE TO CONTEXTUAL PERFORMANCE,

TURNOVER, AND CUSTOMER SERVICE?

Kevin Impelman

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

December 2007

APPROVED:

Michael Beyerlein, Major Professor
Charles Guarnaccia, Committee Member
Mike Clark, Committee Member
Paige Munro, Committee Member
Linda Marshall, Chair of the Department of
    Psychology
Sandra L. Terrell, Dean of the Robert B. Toulouse
    School of Graduate Studies

Impelman, Kevin, <u>How does personality relate to contextual performance, turnover, and customer service</u>? Doctor of Philosophy (Industrial-Organizational Psychology), December 2007, 159 pp., 24 tables, 13 figures, references, 171 titles.

Personality measures are often used by organizations to select and develop employees in a way that maximizes their performance. Studies examining the relationship between personality and job performance have found some evidence for their utility in a variety of situations. Data was collected from a large restaurant company (N=9,800) in which hourly employees took a personality test for selection. Supervisory performance ratings and turnover data were also included for some employees.

A three factor model of contextual performance consisting of personal support, organizational support, and conscientiousness initiative was tested and supported. The personality scales with the strongest relationship to performance, included drive and energy, friendliness, and emotional consistency. Effect sizes were relatively similar to previous meta-analytic studies, with the exception of a facet of conscientiousness which revealed a lower correlation with performance than expected. A differential pattern of correlations between the personality scales and performance dimensions was observed that supported some of the theoretically aligned constructs. The correlations between the personality variables and performance were unexpectedly higher among customer facing employees than team-based employees. No hypothesized interaction effects were supported, but some nonlinear relationships were found among some of the personality scales and performance. Drive and energy was a statistically significant predictor in decreasing the rate of turnover, however no support was found for any personality scale predicting job abandonment or involuntary turnover. Finally, a path model was tested that provided marginal support for performance mediating the relationship

between personality and customer service ratings at the store level. Implications for human

resource practices and recommendations for future research are discussed.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

Chapter

Job Performance
Personality in the Workplace
Models of Job Performance
Customer Service Behavior and Personnel Selection
Current Study

Participants
Measures
Procedure
Analysis

Contextual Performance
Aligned Correlations
Personality and Contextual Performance Correlations
Interactive Effects
Curvilinear Effects
Position Based Effects
Turnover Results
Customer Service Performance Model

Implications
Limitations
Future Research

LIST OF TABLES

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Industrial and organizational psychologists have long sought to identify factors within the individual which allow them to accurately predict work behavior. By identifying individual factors that lead to performance at work, organizations can make better decisions in choosing candidates that will make a positive impact on the organization. Furthermore, organizations can also prevent certain candidates that will not succeed or contribute towards the company's goals. The need for organizations to quickly identify potential candidates has contributed to the growth of the personnel selection industry. There exist several different methods of assessing candidates that can measure a wide range of knowledge, abilities, skills, and work styles. A considerable amount of research has been conducted on these different assessment methods, however future work needs to evaluate the usefulness of these measures in different contexts. While tests of general mental ability (GMA) and job knowledge have been universally accepted as valid predictors of work-related behaviors (Schmidt & Hunter, 1998), the relationship between personality and work behaviors is less clear (Rothstein & Goffin, 2006). Although research is still being conducted on the relationship between personality and job performance, these tools are being used extensively to make selection decisions.

The exact prevalence of personnel selection procedures in the United States is unknown; however several surveys have estimated the usage by polling human resource professionals. A study conducted of recruiters in 2003 indicated that 30% of American companies used personality tests and 20% of members of the Society for Human Resource Management (SHRM) utilize integrity tests for employee selection (Heller, 2005). Another survey conducted by the SHRM found that more than 40% of the Fortune 100 companies reported using personality tests

1

to assess applicants from anywhere between the line worker to the CEO (Erickson, 2004).

Personality testing for selection purposes is a $400 million industry in the United States and is

growing at an average of 10% a year (Hsu, 2004). The most prevalent reason given for

organizations to use personality testing was their contribution to improve employee fit with the

job situation and reduce turnover rates (Rothstein & Goffin, 2006). Many organizations are using

personality tests in their selection process and this trend may continue to become stronger with

the growing use of web based recruiting where employers can quickly assess a candidate's

potential for the job. Research that identifies the personality characteristics necessary for

different organizations and work contexts can help organizations and individuals make better

employment choices that will benefit both parties.

The purpose of the current study to is to explore the personality and job performance

relationship in greater depth. Specifically this study is comparing the usefulness of several broad

and narrow factors of personality to predict a number of performance dimensions and outcomes.

With the widespread use of personality testing, it becomes critical to evaluate where and how

these measures provide utility to organizations. This study seeks to accomplish this through a

detailed analysis of the personality and job performance relationship in a sample of restaurant

workers. Understanding the usefulness of personality testing in the service sector is important

considering the prevalence of workers in this sector. The non-goods producing industries account

for approximately 70% of the total economic activity in the United States, and service industries

account for 55% of the economic activity (U.S. Census Bureau, 2007). Furthermore, the

restaurant industry is a $537 billion industry and employs 12.8 million people in the United

States. This industry provides work for more than nine percent of the population and is the

largest employer in the United States other than the government. Considering the robust nature

of the industry, the results of the study can generalize to other service settings and should be a representative sample of the population considering that nearly half of all adults have worked in the industry at one point in their life (National Restaurant Association, 2007). The results of this analysis can help determine not only how useful personality variables are in an employment context, but also when and where certain traits make their greatest impact for a variety of different outcomes.

Job Performance

Job performance is one of the most important constructs in industrial-organizational psychology research and practice and arguably the most important dependent variable (Arvey & Murphy, 1998; Schmidt & Hunter, 1992). Most of the interventions designed and utilized by industrial-organizational psychologists aim to positively impact job performance. Therefore, if one wants to measure, predict, explain, and change job performance, a common understanding of this construct is essential (Campbell, McCloy, Oppler, & Sager, 1993). However, the measurement and definition of this construct has posed difficulty historically, thus leading it to be known as the criterion problem (see Austin & Villanova, 1992 for a review). The last decade of the twentieth century witnessed a resurgence of research and new conceptualizations of job performance allowing generalizable definitions and taxonomies to emerge (Borman & Motowidlo, 1993; Campbell, 1990; Organ, 1997; Viswesvaran & Ones, 2000). The following sections will provide a review of the current approaches to define and categorize job performance and the implications involved with personnel selection.

Defining Job Performance

A working, operational definition of job performance can help researchers and practitioners alike to effectively measure and impact this critical construct. Job performance can

be defined as the total expected value to the organization of the discrete behavioral episodes that an individual carries out over a standard period of time (Motowidlo, 2003). There are several important ideas included in this definition that need to be discussed in order to understand the various factors in measuring and categorizing this construct.

First, individual job performance is related to behavior. Job performance entails something that people do and can be reflected in the actions individuals take. Performance does not include the consequence or results of those particular actions (Campbell, 1990; Campbell et al., 1993). Results are often mistakenly to be included as measures of job performance due to their ability to be easily quantified and tracked (e.g., sales, turnover, production output). While results and outcomes are influenced by individuals, they are often affected by factors outside of the individual's control. For example, market conditions can have a direct impact on sales and profitability despite the efforts and behaviors exhibited by individuals trying to impact those outcomes.

The second important idea included in the definition of job performance is that performance relates to discrete behavioral episodes. Throughout an individual's workday, there exist several opportunities to behave in a manner that impacts the desired results of the organization; however every behavior will not be related to job performance. Therefore, streams of work behavior are punctuated by occasions when people do something that impacts the organization's goals (Motowidlo, 2003). These discrete units of work behavior can be identified by others (Newtson, Engquist, & Bois, 1977) and can be captured with such techniques as job analytic procedures. Job analysis methods collect information about work tasks that have identifiable beginnings and endings that comprise an individual's workday. Information

collected from this process can be used to determine skills and abilities required to perform the job or identify new methods to organize work in a more effective manner.

The final point emphasized in the performance definition is that performance refers only to behaviors that are relevant to the organization's goals. Individuals' behaviors can contribute slightly or substantially to the organization in a positive or negative manner. Whether a behavior is considered to be favorable or unfavorable to the organization depends on the consequences or outcomes of the behavior. This ad hoc judgment implies that the same behaviors can result in positive and negative outcomes in different situations. In addition, the valence of a work behavior depends on the expected outcome of the behavior if it were carried out over many occasions by many individuals. Therefore, each discrete behavior exhibited by a particular individual at a particular time would not be evaluated to determine its effectiveness. Rather it is the summed behavior that comprises job performance and its dimensions. This definition will serve as a framework to discuss the resulting job performance taxonomies and models.

Dimensions of Job Performance

The number of job performance dimensions can be as large as the number of discrete jobs around the world; however some attempts have been made to identify similar dimensions across jobs. There is no correct set of job performance dimensions, rather this construct can be sliced into different sub-dimensions that vary in terms of behavioral specificity, depending on the objectives of the researcher/practitioner (Viswesvaran & Ones, 2005). Developing a generalizable taxonomy, however, can help researchers and practitioners understand and measure job performance in a consistent manner which creates a common understanding of the construct.

One of the first large scale attempts to define the performance construct across several jobs came from Campbell (1990) who identified eight factors which represent the top of the

latent hierarchy across all jobs in the *Dictionary of Occupational Titles*. The factors include job-specific task proficiency, non-job-specific task proficiency, written and oral communications, demonstrating effort, maintaining personal discipline, facilitating team and peer performance, supervision, and management and administration (see Table 1 for descriptions) Each of these eight factors can be broken down into lower level factors, and their content will vary across jobs. This performance taxonomy represents one of the first attempts to create the dimensionality of job performance across positions, however it lacks some critical performance areas such as innovation and adaptability that may useful in today's economy. In addition, this model does not include many service-oriented performance dimensions which are more critical in today's growing service sector.

In addition to creating general job dimensions across all occupational groups, some research efforts have aimed to define dimensions for specific occupations. One such attempt includes Hunt's (1996) multidimensional performance model for entry- level, hourly occupations. Using performance data from over 18,000 hourly level employees primarily in the retail sector, Hunt (1996) identified nine common job dimensions that were not dependent on job-specific knowledge. The nine dimensions included: adherence to confrontational rules, industriousness, thoroughness schedule flexibility, attendance, off-task behavior, unruliness, theft, and drug misuse (see Table 2 for descriptions). Because these dimensions have little to do about the content of the job, they can be applied to several different situations among hourly workers. Hunt (1996) also proposed a hierarchal structure of these behaviors in which the nine dimensions rolled up into two broad factors. These two factors represent minimal performance behaviors and organizational citizenship behaviors. The minimal performance behaviors involve behaviors that an employee must exhibit (e.g., attendance) or refrain from exhibiting (e.g., theft)

to retain employment. The organizational citizenship behaviors involve the employee exerting effort beyond their proscribed roles, such as schedule flexibility and thoroughness.

The models presented here by Campbell (1990) and Hunt (1996) represent a tremendous effort to classify a wide range of performance factors into a useful taxonomy. These models, however, lack a parsimonious structure that can be applied to many job settings. For instance, Campbell's (1990) model includes many dimensions that only relate to management and supervisory roles. Hunt's (1996) model includes many specific dimensions such as drug misuse and theft that do not apply to certain occupations where it is not a critical contributor to an individual's effectiveness. Clearly, a broader model of individual job performance is needed that captures behaviors across all positions.

Task and Contextual Performance

In order to further generalize the job performance into a more parsimonious structure, Borman and Motowidlo (1993) separated the performance domain into two dimensions: task performance and contextual performance. Task performance involves activities that directly transform raw materials into the goods and services that are the organization's products. In addition, task performance includes activities that maintain the technical core of an organization by replenishing raw materials, distributing finished products, providing planning, coordination, supervising, or staff functions that enable the organization to function effectively and efficiently.

Contextual performance includes behaviors that contribute to organizational effectiveness through its impact on the psychological, social, and organizational context of work. These behaviors include influencing others to carry out organizationally valuable work, defusing hostility and conflict, and encouraging interpersonal trust. These types of behaviors should lead to cooperation, cohesiveness, and improved morale at the group level and will positively impact

group members' performance. Individuals can also benefit the organization and work group

through their own readiness and preparation to contribute. These behaviors can also include

sharing knowledge with others, preparing adequately for job assignments, and proactively

addressing work issues. Another way to contribute to the context of work is through actions that

affect the tangible resources of the organization. This can include conserving office supplies,

electricity, and preventing theft or waste of organizational resources. Therefore, an individual

that helps others, performs their own job well, and effectively utilizes organizational resources

will contribute substantially to the contextual aspect of their work.

Subsequent research has empirically organized and refined a taxonomy of contextual

performance by analyzing thousands of examples of contextual performance across several jobs

(Borman, Buck, Hanson, Motowidlo, Stark, & Drasgow, 2001). The three dimensions included

are personal support, organizational support, and conscientiousness initiative (see Table 3 for

descriptions).

A related construct to contextual performance was provided by Organ (1988) who

described organizational citizenship behavior (OCB) as individual behavior that is discretionary,

not directly recognized by formal rewards systems, and that aggregates to promote the effective

functioning of the organization. Organ (1997) later redefined the construct to capture the similar

thrust of contextual performance which includes behaviors that contribute to the maintenance

and enhancement of the social and psychological context that supports task performance. Recent

research has supported organizational citizenship behavior as distinct from, albeit strongly

related to, task performance (Hoffman, Blair, Meriac, & Woehr, 2007). Different researchers can

use contextual performance or OCB to define the counterpart to task performance, however

contextual performance will be the term used in this research unless certain studies were specifically addressing the OCB construct.

Counterproductive Work Behavior

At the other end of the spectrum of contextual performance are behaviors that hurt and hinder the organization. An accepted term for this type of behavior is counter-productive workplace behavior (CWB), and is defined as any intentional behavior on the part of an organization member viewed by the organization as contrary to its legitimate interests (Sackett & DeVore, 2001). Following the definition of CWB these types of behaviors are intentional in nature and do not include accidental behaviors that were not intended to harm the organization. This construct was further refined by Robinson and Bennett (1995) who found that CWB varies along two factors: organizational/interpersonal directed behavior and serious/minor counter-productivity. The resulting four quadrants are: production deviance (organizational/minor), property deviance (organizational/serious), political deviance (interpersonal/minor), and personal aggression (interpersonal/serious). Therefore, an individual can harm the organization or the individuals within their work context. A similar dimensionality has been supported for OCB as well (Organ & Paine, 1999) in which the target of one's behaviors can be the organization or an individual.

There has been considerable interest in exploring the relationship between CWB and OCB to understand if they are at opposite ends of the same dimension or somewhat distinct constructs that could co-occur (Dalal, 2005). A recent meta-analysis explored the relationship between OCB and CWB and found a modest negative relationship along with differential relationship among antecedents, thus concluding that the two are in fact distinct constructs

9

(Dalal, 2005). Therefore, CWB is another dimension that can be added to the task and contextual performance distinction.

Hierarchical Structure of Job Performance

Together these findings support research which describes job performance across three broad components: task performance, contextual performance (or organizational citizenship behavior), and counterproductive work behavior (Rotundo & Sackett, 2002; Viswesvaran & Ones, 2000). These three dimensions can be further broken down into their subcomponents, and the content can differ based on the occupation and industry. In order to understand if a second order factor of job performance construct exists, research was conducted to identify the shared variance between the job performance dimensions.

In order to identify whether a general factor of job performance existed, Viswesvaran (1993) combined meta-analysis and structural equation modeling to investigate the factor structure. Viswesvaran (1993) collected all of the measures from over 300 studies in the literature to identify whether a comprehensive factor of job performance exists. It was concluded that a general factor of performance existed based on the positive manifold of correlations across the performance dimensions. In a subsequent meta-analytic study of intercorrelations between performance ratings, Viswesvaran, Schmidt, and Ones (2005) supported the finding of a general factor of supervisory performance ratings. This general factor explains 60% of the variance in the ratings after controlling for several sources of measurement error. One of the errors controlled for in this study, halo error, often contributes to very high intercorrelations between performance dimensions within a single rater. This process occurs because a rater forms an overall impression of an employee and does not draw distinctions between performance dimensions; rating poor performers low on all dimensions and good performers high on all

dimensions. Therefore, by controlling for this affect, Viswesvaran et al. (2005) were able to better estimate the true relationship among performance dimensions.

Another important finding from these studies is that the general factor of job performance refers to a psychologically meaningful construct (Viswesvaran et al., 2005). The correlated measures of job performance ratings suggest that a general factor causes the shared variance between the different performance dimensions that generalize across jobs. Job performance is not simply an economic construct that represents an aggregation of various performance metrics; rather it is a latent construct that contributes to theory and understanding of the nature of its antecedents and outcomes (Viswesvaran et al., 2005). This research supports a hierarchical model of job performance that identifies performance distinctions based on their relation to antecedents, such as mental ability and personality. The antecedents of job performance and models relating these constructs will be discussed in greater depth later. In summary, the research supports a hierarchical structure of job performance in which specific performance factors represent three broad dimensions (task, contextual, and CWB), which are a result of a higher order, general factor of job performance.

Characteristics of Criteria Measures

Job performance can be measured through a variety of different methods; however there are some characteristics that should be considered in collecting performance data. Gatewood and Field (2001) described several characteristics including controllability, relevance, measurability, reliability, variance, practicality, and lack of contamination that can impact the measurement of job performance.

Controllability needs to be considered due to the fact that situational constraints can greatly influence performance measures. For example, a branch manager may be evaluated on

11

their performance based on their unit's profitability. However, profitability can be influenced by a number of factors outside of that manager's control. Interest rates, staff size, and staff salary are often determined by higher levels of management which can have a direct impact on the profits of that particular branch. Therefore, any performance metric needs to be first evaluated on the level of controllability an individual has on the metric, or else the metric should not be utilized on an individualistic basis.

Relevance refers to whether the performance measurements reflect critical areas of one's job (i.e., contribute positively to the organization). For example, attendance may be a critical function of an hourly manufacturing job, however for some management positions the time when they arrive and depart is not as critical to the organization. A thorough analysis of the job needs to identify those critical areas that contribute the organization's performance. Relevant job performance dimensions are often determined based on the value provided by performing certain behaviors over time. It is these behaviors which contribute to the organization's effectiveness that should be measured, although that is not always the case.

Job performance refers to scalable, measurable behaviors and actions (Viswesvaran & Ones, 2000). Performance can be measured through two main methods: organizational records or subjective evaluations (Viswesvaran & Ones, 2005). Organizational records can be further classified into productivity and personnel data (Schmidt, 1980). Productivity measures can include number of units produced or number of errors while personnel data includes such measures as attendance and promotion rates. While organizational records are often considered as better "objective" records of performance, they often reflect outcomes instead of job performance behaviors. Once again, outcomes are subject to situational factors that limit one to adequately measure the contribution of an individual's behaviors. Subjective evaluations are

often behavioral ratings provided by supervisors (Viswesvaran & Ones, 2005). While these ratings better reflect the actual behaviors of an individual, one needs to consider the potential errors associated with human judgment.

Some of the errors associated with subjective ratings include halo, leniency, severity, and central tendency. Halo error occurs when an individual is rated equally across performance dimensions due to a general impression of the worker. Therefore, specific attention is not paid to differentiating between the performance dimensions. Leniency occurs when ratings are distorted in a positive evaluation of an individual and severity occurs when ratings are distorted downwards. In other words, some supervisors may be more generous in their ratings while others are more strict, which is a characteristic of the supervisor *not* the actual difference between subordinates. Central tendency occurs when a disproportionate number of ratings gather in the middle of the scale. This last error can influence another characteristic of appropriately constructed performance measures, variability.

If all employees are rated as average on a performance dimension, then it limits one's ability to understand differences among individuals and job performance dimensions (Inceoglu & Bartram, 2006). This often has a considerable impact in determining antecedents of job performance, such as in personnel selection, where variables such as personality cannot distinguish between individual performers because they are all performing at the same level. Some methods have been developed to increase the variability and accuracy in performance ratings. Providing behaviorally anchored rating scales (BARS) is one method to increase accuracy and consistency across raters because it provides examples of what the different scale points represent (e.g., what does a 3 on a 5 point scale reflect in behavioral terms?) (Smith & Kendall, 1963). Another method to increase variability is to rank individuals from best to worst.

Forced distribution methods in which a fixed percentage of individuals are placed in each level can also generate more variability and create a normal distribution.

Practicality refers to the ease and logistics of gathering performance data. For instance, collecting customer ratings of an employee's performance in a customer interaction could be a useful measure of performance, however the logistics involved in asking and following through with the collection of this information can be unwieldy. This often results in a balance of what should be measured and what can be measured. Many performance metrics may actually interfere with the everyday operations of the organization, which results in a decline of the organization's overall performance. Therefore, practical methods to collecting performance data must consider the broader impact it has on the organization performing its main function.

Criterion contamination involves the inclusion of sources of variance in a performance measure that was not intended in the conceptualization of that measure. This can occur in several ways. For example, when providing performance appraisals, a supervisor may give more favorable ratings to an individual that needs a raise due to their financial situation. Therefore, the ratings are not reflective of the subordinate's behavior; rather it is reflective of the subordinate's financial state. Another example occurs when promotion is used as a performance measure. In many instances an individual's promotion rate is not based on performance rather it is often based on relationships with top management. These sources of error need to be eliminated when using measures of performance in order to uncover someone's true performance level.

The reliability of performance measures needs to be scrutinized as closely as the many variables used to predict performance (e.g., selection tests). Many antecedents, such as personality tests, are carefully designed to be reliable and valid measures. However, many criterion measures in job performance research are just thrown together without the consideration

of their reliability. There exist four types of variance that relate to the reliability of a performance measure - transient error, rater idiosyncratic variance, item-specific variance, and random response error (Viswesvaran & Ones, 2005). There are several methods that can be used to adjust performance scores that attenuate results and relationships with other variables when conducting research. For instance, interrater reliability coefficients can be used to adjust rater idiosyncratic variance and coefficient alphas can be used to adjust for item-specific variance. These reliability adjustments are critical to the interpretation of the results when conducting personnel selection validation studies (Viswesvaran, Ones, & Schmidt, 1996). Identifying these sources of error a priori is useful when carrying out any type of research in the job performance domain.

Addressing the characteristics of criteria (e.g., controllability, reliability, variance, etc…) is a critical step when choosing among job performance measures and the research outcomes can be substantially altered based on these characteristics. In the personnel selection literature, the majority of the attention is placed on the predictor (e.g., selection test) and little attention is placed on identifying appropriate criteria. This strategy is not recommended, because all variables in a research study need to be empirically and theoretically sound. The construct of job performance needs to be well defined, and the method of measurement needs to consider the various factors that impact the results when conducting research that includes job performance variables.

Personality in the Workplace

The relationship between personality and job performance has received considerable attention and debate throughout the 20th century. Research conducted up until to the mid-1980s concluded that personality and job performance had no meaningful relationship across situations. In an influential review of the literature, Guion and Gottier (1965 p.159) concluded that, "There

is no generalizable evidence that personality measures can be recommended as good or practical tools for employee selection." This conclusion was accepted for another 25 years and received little resistance in the literature. However, this conclusion was reached without a thorough understanding of the personality construct. There was no classification system that could reduce the numerous personality traits into a useful framework, and each personality scale on every inventory was treated as a separate construct. Furthermore, reviews of the literature at this time lacked the quantitative power to correct for study artifacts that downwardly bias the validity of personality measures. Due to these constraints, there was little understanding of a consistent relationship between personality constructs and performance constructs.

A new phase of research beginning in the mid-1980s and growing in the early 1990s revealed optimistic results for the personality - job performance relationship. This research was enhanced by the use of a taxonomy of personality variables, the "five factor model" (FFM), and the use of meta-analytic methods to summarize results across studies. These two methodological interventions provided researchers a common framework to study this relationship at the construct level. This strategy is more useful to enhance the collective knowledge and understanding of these relationships because it utilizes a theoretical basis to explain these quantitative relationships.

Five Factor Model of Personality

Personality traits are enduring dispositions and tendencies of individuals to behave in similar ways across situations and settings (Ones, Viswesvaran, & Dichert, 2005). There are an infinite number of personality characteristics that can differentiate between individuals; however a taxonomic structure helps explain scientific phenomena in a useful manner. An accepted personality taxonomy has been labeled the five factor model (FFM) (Digman, 1990; Goldberg,

1995; McCrae & Costa, 1997). The FFM is also cited as the "Big Five", however for consistency, the FFM will be used throughout this review. The FFM has its roots in the lexical hypothesis provided by Galton (1884), who noted that personality traits are captured in the words people use to describe each other. Following this hypothesis, Allport and Oldbert (1936) studied a lengthy list of personality adjectives in the dictionary to reduce the list to a finite number of factors. Tupes and Christal (1961/1992) were the first researchers to identify the factors now associated with the FFM. The labels for the five factors are conscientiousness, extraversion, agreeableness, emotional stability, and openness to experience (Costa & McCrae, 1992). These factors are defined as follows:

1. *Conscientiousness* refers to the extent to which individuals are hardworking, organized, dependable, and persevering versus lazy, disorganized, and unreliable.

2. *Extraversion* concerns the degree to which individuals are gregarious, assertive, and sociable versus reserved, timid, and quiet.

3. *Agreeableness* is the extent to which individuals are cooperative, warm, and agreeable versus belligerent, cold, and disagreeable.

4. *Emotional stability* measures the degree to which individuals are insecure, anxious, and depressed versus secure, calm, and happy.

5. *Openness to experience* refers to the extent to which individuals are creative, curious, and cultured versus practical and having narrow interests.

A number of theoretical and empirical studies have provided continued support for the FFM as a useful taxonomy of personality. This evidence includes factor analytic evidence (Norman, 1963), genetic influences on the five factors (Bouchard, 1997), stability of the FFM across the lifespan (Costa & McCrae, 1998), and the replicability of the FFM across different theoretical frameworks, assessment approaches, in different cultures, and in different languages (e.g., Digman & Takemoto-Chock, 1981; Digman & Shmelyov, 1996; Somer & Goldberg, 1999).

Data from personality inventories have provided consistent evidence for the hierarchal organization of the FMM (Ones et al., 2005). At the lowest level of the hierarchy are responses to test items, the items then cluster together to form specific facets, and facets that share psychological meaning combine to form the broader personality factors. For example, extraversion is a broad factor that includes facets such as sociability, energy, and assertiveness. It is also worthy to note that the five factors are not orthogonal and have moderate correlations with one another. Following this conclusion, additional research has provided evidence for two higher order factors that supercede the FFM (Digman, 1997). Digman (1997) named the two higher order factors, alpha and beta. Factor alpha represents a construct of socialization and getting along with society rules, norms, and conventions. Conscientiousness, agreeableness, and emotional stability comprise factor alpha. Factor beta includes extraversion and openness to experience factors and represents personal growth. Subsequent meta-analytic investigation has confirmed this hierarchical organization, with the higher order factors represented at the top (Markon, Krueger, & Watson, 2005). See Figure 1 for an illustration of this hierarchy.

Although the FFM has received considerable attention and support, some researchers argue that the FFM is not comprehensive enough, and that many important variables are not captured in the current taxonomy (Hough, 1997; Paunonen & Jackson, 2000). Each research project should include relevant variables that help them best answer the stated hypothesis, and many dispositional traits may be included in these projects that are not captured in the FFM. However, to generalize results and provide a common language to discuss findings, the FFM provides a useful framework. It would be difficult to include every variable deemed important in a common taxonomy considering the number of different research questions and approaches proposed n the scientific community. Other arguments include that the FFM confounds

constructs by merging heterogeneous variables, thus obscuring critical relationships with criteria of interest (Paunonen 1998; Schneider & Hough, 1995). This refers to the fact that many FFM traits are too broad and information is lost by combining relevant facets into the five factors. Researchers have addressed this concern by investigating relationships with personality at the facet level. This research has uncovered new findings from facet level results and additional information that is lost at the factor level (Paunonen, 1998). Despite these criticisms, the FFM is the most widely used taxonomy in personality research, and is useful to summarize and organize relationships between personality variables and job performance criteria (Hough, 2001; Rothstein & Goffin, 2006).

FFM Validity for Predicting Job Performance

The relationship between personality and job performance in the workplace is often explored by correlating measures of personality (e.g., self report test) and measures of job performance (e.g., supervisory ratings). The resulting correlation coefficient often describes the "validity" of the personality measure. Before the validity of personality and job performance is discussed, it is important to define the term "validity." Validity is defined here as the degree to which evidence and theory support the interpretation of test scores for various proposed uses of a test (AERA, APA, NCME, 1999). Validation refers to a compilation of evidence of the inferences made and used in reference to a test. Validity is not a specific attribute of a test, because any test can be valid for some criteria and not others. Therefore, validation is specific to the context and use of tests. Validation involves a theory development and testing, and every component of that process is important (e.g., the test and the criterion). There are several different validation approaches, but the one of interest here is the criterion-related validity of personality instruments because the current study is evaluating the quantitative relationship

between personality scales and several aspects of job performance. The criterion of interest in personnel selection contexts is often job performance, and the criterion-related validities are determined by the correlation between the test(s) and the measure(s) of job performance. Therefore, the criterion-related validity refers to the quantitative relationship between the two constructs.

Two influential meta-analytic studies renewed optimism and promise of the criterion related validity of personality variables (Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991). Barrick and Mount (1991) found that conscientiousness positively correlated with job performance across occupational groups and criterion types. Although the correlations were modest in size, the incremental validity of personality measures when used with cognitive ability tests can provide substantial utility to personnel selection decisions (Schmidt & Hunter, 1998). Tett et al.'s meta-analysis took an alternative approach, in that it emphasized the importance of a confirmatory research strategy, where personality measures were linked a priori to job performance criteria based on their theoretical connections. In Tett et al.'s meta-analysis, emotional stability emerged as a strong predictive variable, which was replicated in subsequent meta-analytic studies (Anderson & Viswesvaran, 1998; Salgado, 1997). These two studies set the stage for additional research in this area, and contributed greatly to the literature by utilizing the five factor model as a working taxonomy of personality.

Many of the resulting studies exploring the FFM and job performance came with conflicting results. Some studies found evidence for certain FFM as strong predictors of job performance, while others found low or negative relationships with the same traits. Barrick, Mount, & Judge (2001) summarized 15 meta-analytic studies to settle the confusion in the literature and encourage researchers to take a new approach to examining this relationship. In

this quantitative review, Barrick et al. (2001) investigated several different moderating variables that could influence the personality-performance relationship, such as performance dimension and occupational type. This meta-analysis included many different personality measures that could be categorized into the FFM. They found that conscientiousness generalizes across all occupations and its validity is the highest overall. This can be explained by the fact that highly conscientious individuals show greater productivity at work because they spend more time on their assigned tasks, they acquire greater job knowledge, they set goals and persist after them, they go beyond role requirement, and they avoid counterproductive behaviors (Ones and Viswesvaran, 1996a). Emotional stability was the only other FFM trait that revealed a non-zero true score correlation with the performance criterion across occupations. The remaining three FFM traits predicted some aspects of performance in some occupations. For instance, extraversion was found to be useful in predicting performance in managerial occupations (see Table 4 for results).

Based on these findings, Barrick et al. (2001) suggested future research should link specific FFM facets to specific criteria to witness increased correlations and further understanding of the constructs. For example, a lower level facet of calmness (facet of emotional stability) linked with a criterion measure of stress proneness may reveal a larger correlation than using overall job performance as the criterion. Hurtz and Donovan (2000) made the same conclusion in their previous meta-analytic study, in which they found support for certain personality traits (e.g., agreeableness for interpersonal facilitation) that had not been previously identified because the criterion measures were too broad. In accordance with the concept of linking broad and narrow personality measures with several dimensions of job performance, Hough and Furnham (2003) summarized meta-analytically derived validities of several

personality variables at the global and facet level for a variety of performance dimensions (e.g., task performance, contextual performance, and counterproductive behavior). In addition, they reported validities for compound traits, which are tests constructed to predict certain criteria and capture the several aspects of different personality variables. These compound traits revealed much stronger correlations with job performance than the FFM traits. These studies emphasize the importance of reviewing the personality-performance relationship at a closer level and considering potential moderator effects in all analyses.

These results reveal general support for the utility of personality in predicting job performance; however, there exist several considerations when exploring their relationship. These considerations include whether or not to use broad or narrow facets, what type of criterion measure is appropriate, what type of occupation do certain personality traits predict, and how the two constructs (personality and performance) are linked on a theoretical basis. The following sections discuss these issues as they relate to the current study.

Broad vs. Narrow Measures of Personality

The current methodological debate among personality researchers, known as the bandwidth-fidelity dilemma, involves the utility of using broad personality traits (e.g., FFM traits) rather than specific facets in predicting workplace behavior. This debate refers to the trade-off between the fidelity (measurement precision) of narrow facets and the bandwidth captured in broader, heterogeneous factors (Cronbach & Gleser, 1957). This debate has included several empirical studies addressing this particular issue, and there now seems to be some conclusions that can guide this type of research into a new direction.

Ones and Viswesvaran (1996b) argue for using broader personality variables because they typically result in higher internal-consistency estimates than narrow measures. This point

rests on the fact that many narrow measures contain fewer items than broad measures. Therefore, broader measures of personality are able to capture variance that is shared by several lower level facets due to the greater number of items measuring these shared constructs. Another reason to utilize broad personality factors is that the complex, heterogeneous nature of broad personality traits better predict broad, multifaceted constructs such as job performance. Ones and Viswesevaran (1996b) cite evidence that multiple act criteria are better predicted than single act criteria (Fishbein & Ajzen, 1974), thus lending support to use broad personality factors to predict the broad construct of job performance. In other words, when examining the attitude-behavior link, the composite of multiple behaviors are better predicted by attitudes than specific behaviors which should be true of the personality and performance relationship as well. For these reasons, proponents of the broad measures of personality believe that they can add to the prediction in a personnel selection context.

Ones and Viswesvaran (1996b) do cite one advantage of using narrow predictors, however, and that is for training and development purposes. This advantage allows narrow measures to provide additional utility across the employee life cycle, rather than stopping at the selection phase. This point is often overlooked in the literature, even for proponents of narrow measures; however it is a critical point when considering the practical use of personality instruments.

Multiple studies have been reported in response to Ones and Viswesvaran's arguments for using broad predictors. Paunonen, Rothstein, and Jackson (1999) state that specific variance in narrow measures can only add to the validity of the broad measures in predicting the criterion. These authors argue that in the case of predicting broad, complex criteria, the best predictors may be a few narrow traits that represent different factors rather than many traits from a single

factor. Information and predictive power is lost when several constructs are combined into a multidimensional predictor (Nunnally, 1978; Paunonen, 1998). Paunonen and Ashton (2001) supported this argument by revealing that carefully selected facet scales predicted as well or better than the FFM scales for a variety of outcomes. Furthermore, a substantial part of the criterion variance predicted by the facet scales was not predicted by the factor scales. Therefore, predictive power is lost when broader measures are used and the psychological meaning of the results is lost as well.

Several other studies have replicated Paunonen and Ashton's (2001) results in an organizational context. Some research has highlighted the differential relationships between different facets within a factor and various criteria. In a recent study, Roberts, Chernyshenko, Stark, and Goldberg (2005) found that facets of conscientiousness exhibited differential predictive validity with different criteria while also providing incremental validity over the broad dimension for extrarole behaviors, including aspects of contextual performance and counterproductive behavior. In a meta-analytic investigation of the validity of conscientiousness facets, Dudley, Orvis, Lebiecki, and Cortina (2006), found that facets provided incremental validity beyond the global measure across several aspects of job performance. They also found that the amount of the narrow facets' incremental validity depended on the type of performance. For instance, dependability, a facet consisting of someone who is reliable and respectful of laws and authority, made a substantial contribution to the prediction of job dedication over and above the global conscientiousness measure; however it did not significantly predict task performance beyond the broader measure.

Another argument in favor of the narrow facets concerns the changing nature of work. The concept of a job is changing, which then impacts the psychological constructs related to

successful performance. For these reasons, it has been suggested that practitioners need narrow measures that can be combined to form predictor composites tailored for the appropriate prediction of performance (Hough & Furnham, 2003). This echoes the statement about the effectiveness of narrow measures in employee training and development. The narrow facets can better capture the subtle differences and changes across and within jobs to better predict relevant performance dimensions.

After reviewing studies of this debate in the last decade, Rothstein and Goffin (2006) concluded that narrow traits are often better predictors of job performance and add significant incremental validity over broad factors. This conclusion is derived from studies that directly compare the broad factors with its facets (Jenkins & Griffith, 2004; Tett, Steele, & Beauregard, 2003) as well as studies that conceptually link narrow facets to particular performance criteria (Ashton, 1998; Ashton, Jackson, Paunonen, Helmes, & Rothstein, 1995; Conte & Gintoft, 2005). In summary, the narrow facets contribute incremental validity to broad personality measures, especially when used to predict conceptually linked predictors.

Instead of choosing a side in this debate, some researchers propose that predictors should match the criteria in terms of specificity in order to find the best criterion-related validities (Barrick & Mount, 2003; Hogan & Roberts, 1996; Schneider, Hough, & Dunnette, 1996). Broad predictors should be used to predict broad criteria, while narrow predictors should be used to predict narrow criteria. Therefore some researchers will explore this relationships at a broader level because they utilize broader criteria (e.g., Ones and Viswesvaran) while others will prefer to use both narrow and broad criteria in order to focus on the construct relevance of the predictor for the criterion (e.g., Hogan and Hough).

Throughout this debate a recurring theme involves the criticality of developing a theoretical link between personality measures and the criteria of interest (Hough & Furnham, 2003; Rothstein & Jelly, 2003; Tett et al., 1991). Therefore, regardless of the level of measurement, a priori hypotheses between constructs will provide further clarification on the relationship as opposed to a shotgun approach which analyzes a heterogeneous set of constructs that may not be theoretically related. This approach may find stronger relationships between personality constructs and job performance. In reference to this issue, Murphy and Dziewecynski (2005) doubt the relationship between personality and performance and believe it is due to the absence of theory linking personality to job performance and the difficulty in matching personality to relevant performance criteria. Future research needs to take these considerations into account when exploring the relationship between personality variables and job performance.

Aligning Personality and Performance Constructs

The strong call to align personality and performance constructs in order to explore the personality-performance relationship has started to reveal itself in the literature. By further delineating personality constructs and job performance dimensions along an accepted taxonomy and then matching the dimensions in a logical manner will serve to expose the true utility of personality variables in their prediction of job performance.

Hogan and Holland (2003) used socioanalytic theory to guide the process of aligning personality and performance constructs in their meta-analysis of the personality-performance relationship. According to socioanalytic theory, people are motivated to behave in order to get along with members of the group or get ahead and achieve status. These motives are justified in evolutionary terms in that people who lack the ability to get along with others or who lack status and power have reduced ability to promote their genes. Socioanalytic theory defines personality

26

from the actor and the observers point of view. The actor's view is the person's identity while the observer's view is the person's reputation. Under this notion, reputation describes a person's behavior, while identity explains it.

In their meta-analysis, Hogan and Holland (2003) grouped performance dimensions and personality factors based on the two themes of "getting along" and "getting ahead" and evaluated the relationships using the vast database of validities from their personality instrument, the Hogan Personality Inventory (Hogan & Hogan, 1992 5h). Using the FFM as a framework, Hogan and Holland (2003) found that the personality factors of Emotional Stability, Conscientiousness, and Agreeableness predicted performance involving getting along with others. These three personality constructs also mirror Digman's (1997) factor alpha which involves the socialization process. When predicting one's ability to get ahead, the authors found evidence for the personality factors of Emotional Stability, Extraversion, and Openness to Experience. Furthermore, they found that when these personality constructs were aligned with the corresponding performance dimensions, higher mean validities were realized than previous meta-analyses (e.g., Barrick & Mount, 1991; Hurtz & Donovan, 2000). In addition, to these results, Hogan and Holland (2004) found evidence that certain FFM traits are too broad (e.g., Extraversion and Openness to Experience) because the facet scales produce differential validities with performance. For example, they found that the ambition facet of Extraversion is largely responsible for its relationship with performance, as opposed to the sociability facet. Therefore, the facets of extraversion, such as energy, sociability, and dominance, should be matched with the appropriate performance measure to evaluate its utility. This provides further evidence for theoretically aligning the constructs and matching the bandwidth of predictors and criteria.

Another study taking a similar approach to investigate the personality-performance relationship is provided by Bartram (2005) who highlights the importance of taking a criterion-centric approach to validation. Bartram (2005) explains that the traditional approach to validation has been predictor centric and asks such questions as "How well does personality predict performance?" or "How well does *X* predict something?" He argues for a more focused approach in which one asks, "How can we best predict *Y*?" where *Y* is a meaningful and important aspect of work. This approach involves taking a competency framework that differentiates job performance into meaningful and measurable workplace behaviors. Bartram (2005) emphasizes the importance of defining performance as a multi-dimensional construct reflecting workplace behaviors, not outcomes. Through extensive research, Bartram (2005) presented a model of workplace performance, known as the Great Eight, which defines eight broad competency factors to guide the process of aligning personality and job performance dimensions (Bartram, Robertson, & Callinan, 2002). These eight dimensions contain subcomponents and were hypothesized to be linked to ability and FFM antecedents. Table 5 lists the competencies associated with each FFM trait.

Bartram (2005) assigned the predictor and criterion constructs based on the Great Eight framework and calculated the meta-analytic validities. Similar to Hogan and Holland's (2004) findings, the average correlation of the theoretically linked constructs were higher than the average correlation of the nonhypothesized relationships. Furthermore, they found evidence for differential validities between ability and personality antecedents in predicting the performance dimensions. The research also revealed support for the task and contextual performance distinction, in which a factor analysis of the eight competencies resulted in two broad factors. Furthermore, the study found that the task performance dimension was better predicted by ability

and conscientiousness while the contextual performance dimension was best predicted by personality competencies associated with supporting and cooperating with others. Bartram (2005) concluded that researchers and practitioners would benefit from differentiating the performances construct in order to better understand the usefulness of predictors and identify useful performance dimensions that could promote learning and development.

To provide further support for Bartram's (2005) conclusion, Inceoglu and Bartram (2006) conducted studies in which the level of differentiation of job performance varied, and the validities of personality scales were compared. Results showed that a competency based performance measure that included several performance dimensions obtained substantially higher validities than that of an overall job performance rating. In addition, they also found that the hypothesized relationships between the personality predictors and performance dimensions revealed higher validities than the unpredicted hypothesized relationships.

Both the Hogan and Holland (2004) and Bartram (2005) studies found a considerable increase in the relationship between personality and job performance when the constructs were theoretically aligned. These studies also provided support to categorize both the predictor and criterion constructs in a relevant taxonomy before examining the relationship between the two. While the Hogan and Holland (2004) and Bartram (2005) studies provided additional evidence for taking a construct oriented approach to validation, these studies only used their respective personality tests to explore the relationship. Future research needs to take a similar approach using different personality tests in order to build the nomological net required to understand these relationships. Additional personality scales and facets, performance dimensions, and occupational groups will provide a better understand of the personality-performance relationship for the general working population.

Moderator Effects of the Personality-Performance Relationship

The previous studies have revealed that the relationship between personality and job performance is quite complex. Several studies have investigated this relationship at a more specific level by identifying moderators that influence the relationship. Some of the potential moderators that relate to the current study include the type of criterion, work context, and interactions between personality variables.

In an earlier meta-analysis, Hough (1992) found the importance of investigating moderators in the personality and performance relationship. This study expanded the FFM by analyzing the relationship between nine personality factors and several different job performance dimensions. The data revealed that all nine personality constructs had a different pattern of relationships with criteria, and each personality construct was useful for predicting at least one job performance construct. In addition, they found a high score on a personality construct may be a negative indicator of future success on one type of job performance dimension and a positive indictor of success for another. For instance, agreeableness would be a positive indicator of teamwork, but a negative indicator of creativity. Therefore, across different work contexts, some performance dimensions will be more critical to success than others. When using a personnel selection system, some traits would be useful in identifying individuals that would lead to these differential performance factors. For instance, if creativity is a critical component to job performance, then agreeableness would not be a relevant personality trait to measure, however openness to experience should be measured.

Personality and Job Performance in an Interpersonal Work Environment

In an expansion of Hough's (1992) findings, Hurtz and Donovan (2000) used the FFM taxonomy and job performance dimensions to compare the effectiveness of certain traits in the

prediction of different performance constructs. Hurtz and Donovan (2000) conducted a meta-analysis and separated the criteria into task performance and two aspects of contextual performance: interpersonal facilitation and job dedication. They found support for Agreeableness, Emotional Stability, and Conscientiousness as stable predictors of the interpersonal facilitation component, concluding that personality reveals a stronger relationship with jobs that are more interpersonal in nature. In a subsequent study, Nikolau (2003) found support for openness to experience as being a predictor of performance in jobs involving interpersonal skills. Together these studies suggest that personality variables may be more predictive in work contexts that require interpersonal facilitation. These types of work environments can include interaction with customers or co-workers in which performance is determined by the quality of interaction with others, not necessarily the rate of production.

Mount, Barrick, and Stewart (1998) investigated the utility of personality measures for jobs that require interpersonal interaction. These jobs included service-oriented jobs in which customer contact is frequent, and team-based environments where individuals are expected to work cooperatively. The results of this meta-analysis indicated that all FFM traits had non-zero relations with overall job performance. More specifically, they found the greatest relationship between conscientiousness, agreeableness, and emotional stability and job performance were in line with Hurtz and Donovan's (2000) findings. In addition, they found support for their hypothesis that agreeableness and emotional stability would be stronger predictors for teamwork based jobs than for service based jobs. Emotional stability may be more important in a team context than a customer facing context because someone's negative affective tone can directly impact the other team members and limit one's ability to work effectively. Different customers come and go, and may not notice an individual's inconsistent mood, whereas team members will

be impacted by this inconsistent behavior as they work with an individual across time. Agreeableness may be a stronger predictor for teamwork because it is more important to avoid competitive behaviors in a team environment than it is in a service context. When serving customers, an employee may be challenging the customer to upgrade to a better product, whereas in a team context employees need to work cooperatively and not challenge each other.

Considering the increased use of work teams, additional research has investigated the importance of personality variables in this context. Organizations have embraced work teams as a critical tool to respond to increased global competition and rapid technological change (Neuman, Christianson, & Wagner, 1999). Therefore, understanding the relationship between personality and team effectiveness is critical with the changing nature of work design and structure.

Subsequent studies to Mount et al.'s (1998) meta-analysis have found support for four of the five FFM traits in predicting performance in a team environment. These traits include agreeableness, extraversion, emotional stability, and conscientiousness. It seems that conscientiousness reveals a strong relationship across all occupations and that includes work in team based environments (Morgeson, Reider, & Campion, 2005; Neuman et al., 1999). Working in a team context requires individuals to be dependable and thorough as their work directly impacts others' ability to perform their job. This reasoning provides theoretical support for conscientiousness as a valid predictor. Emotional stability is also related to job performance in a team setting (Morgeson, Reider, & Campion, 2005; Neuman et al., 1999). Always remaining calm and secure when working with others will help other team members expect a consistent behavior pattern that will positively impact the team's performance. In a review of 15 studies evaluating team performance and FFM constructs, Rothstein and Goffin (2006) concluded that

extraversion is the best predictor of team-related behavior and performance. Extraversion can contribute to job performance in a team environment, because individuals that seek interactions with others will communicate more frequently, remain motivated in the presence of others, and be driven to work at a consistent pace with the team. In contrast to Rothstein and Goffin's (2006) conclusions, Barrick et al. (2001) found the strongest relationship between agreeableness and team performance in their comprehensive meta-analysis. Agreeable team members will be helpful and cooperative allowing the team to work smoothly without conflicts getting in the way of performance. In fact considering that teamwork is often synonymous with cooperativeness, helping behaviors may be considered task performance in a team context rather than contextual performance in an individualistic environment (LePine, Hanson, Borman, & Motowidlo, 2000). Therefore, the defining characteristic of cooperative performance in a team context requires agreeable team members. These results point to the fact that having more conscientious, extraverted, agreeable, and emotionally stable individuals in a team will lead to greater performance.

Barrick, Stewart, Neubert, and Mount (1998) extended these findings and investigated the relationship between the FFM and team performance at the team level rather than the individual level. In this study, Barrick et al. (1998) compared mean levels of personality variables across teams. Mean levels of conscientiousness, agreeableness and emotional stability were related to high performance. Furthermore, teams that were more extraverted and agreeable were more viable and lasted longer. Additionally, they found that the presence of a particularly disagreeable or introverted member can negatively impact team performance. This study provides another unit of analysis of the relationships between these constructs. Overall, these results provide support

for exploring the personality-performance relationship in greater depth in team and service based environments.

Personality and Turnover

In many jobs the most important aspect of performance is the presence of an employee. The costs associated with absenteeism and turnover can be considerable for many organizations that rely on the daily presence of its workers. The U.S. Department of Labor estimates that the average cost to replace a worker in private industry is $13,996 (O'Connell & Kung, 2007). These turnover costs can range from a percentage of a person's salary to two to four times their salary depending on the position (Dooney, 2005). The cost of turnover includes separation processing costs, replacement hiring costs, training new hire costs, and lost productivity (Cascio, 1991). In addition to these costs, the loss of a person's intellectual capital (e.g., technical and organizational knowledge), social capital (e.g., relationships and networks), and tacit knowledge (e.g., efficient procedural skills) can negatively impact the organization's viability. Despite the large costs associated with turnover, the numerous studies exploring job attitudes and turnover (Griffeth, Hom, & Gaertner, 2000), and the proposition of psychological testing to prevent turnover (Rothstein & Goffin, 2006), little research has been conducted on personality variables that can be incorporated in a selection context (Barrick & Zimmerman, 2005). One study found that self-confidence and decisiveness were negatively related to voluntary, organizationally turnover in a predictive validation design (Barrick & Zimmerman, 2005). Furthermore, they found that attitudinal variables, most often studied in the turnover field, failed to add incremental validity to the personality traits in predicting turnover. Among current employees, these construct have revealed a strong relationship with turnover, but this study revealed that they were less relevant for applicant populations. Another recent study exploring the personality-turnover

relationship used the FFM as a personality framework, and found that extraversion was positively correlated with absenteeism (Furnham, 2006). This was the only FFM variable relating to absence in a job. Future research needs to investigate this relationship further, considering the costs associated with turnover. Also, there exist several different types of turnover (e.g., involuntary and voluntary) that may reveal differential patterns with personality variables.

Interactions between Personality Traits in Predicting Job Performance

Personality variables may not always reveal a separate, direct impact on job performance, in fact research suggests that interactive effects may be present (Witt, Burke, Barrick, & Mount, 2002). In particular, Witt et al. (2002) evaluated the conscientiousness, agreeableness interaction across six studies. The results indicated that the relationship between conscientiousness and job performance is greater among workers high in agreeableness. In other words, conscientious workers that lack interpersonal sensitivity were less effective than conscientious workers who were considerate of others. These findings were significant in job settings where interpersonal interaction was critical to performance. In another recent study, Warr, Bartram, and Martin (2005) did not find evidence for interactions between conscientiousness and other FFM traits in a sales job. Therefore, one's level of agreeableness did not impact the relationship between conscientiousness and sales performance. Clearly, more work needs to investigate the interactive nature of FFM variables.

Curvilinear Relationships between Personality and Job Performance

The meta-analytic evidence provided for the relationship between personality and job performance assumes that the two constructs are related to each other in a linear fashion. The methods used to evaluate these relationships rely on statistics that assume linearity between the two variables. Murphy and Dziewecynski (2005) speculated that the relationship between

personality and job performance is likely to be curvilinear in many instances. For example, they hypothesized that supervisors need a certain level of agreeableness in order to be most effective. While highly disagreeable supervisors are often ineffective, supervisors that are too agreeable may not be able to deliver bad news or provide critical feedback, an essential function of their job. Additionally, Murphy and Dziewecynski (2005) suggested that a manager who is very conscientiousness may try to do things "by the book" and not be flexible in times where it is needed. These arguments follow logically when one considers that clinical psychologists have shown that extreme scores on normal personality traits are often maladaptive (Costa & Widiger, 1994). If these nonlinear relationships exist, then the current literature may be underestimating the true relationship between these constructs, and practitioners may be underutilizing personality measures in the work setting.

Nonlinear relationships can take on several different forms. Quadratic relationships can be best described as a line with a single bend, hump, or curve. These relationships involve either an asymptotic or inverted-U function between two variables. An asymptotic relationship suggests that the link between a personality variables and performance is positively monotonic up to a point, but then levels off and an increase in the personality variable no longer makes a difference in performance. Inverted-U relationships occur where there is an optimal level of a characteristic, but then too little or too much of that characteristic can have negative effects. A third nonlinear relationship involves a cubic function which has two bends, humps, or curves. This cubic function would involve a personality trait that effectively predicts performance at the extreme ends of the trait, but fails to explain variance in the middle.

The research conducted on the nonlinear relationship between personality and job performance has been sparse. Robie and Ryan (1999) investigated the nonlinear relationship

36

between conscientiousness and job performance across five independent samples. They failed to find any significant effect of quadratic or cubic effects between the two variables. In a more recent study, however, LaHuis, Martin, and Avis (2005) found a nonlinear relationship between conscientiousness and performance among two samples of clerical workers. They found an asymptotic relationship existed among both samples in which a high level of conscientiousness did not contribute any more to job performance than a moderate level of the trait. The authors cited two possible reasons for this finding. One reason is that jobs that are low in autonomy (such as clerical workers) only require a certain level of conscientiousness to perform effectively because of the structured work tasks that do not allow much variation in performance. Another reason given by the authors was that individuals who fake the test may score high on the conscientiousness measure, when in fact they are just using impression management to get the job and do not posses a high level of that trait. Another recent study found a nonlinear relationship between emotional stability and job performance in a large sample of current employees (Le, IIies, & Holland, 2007). They found that people who scored lower than the optimal point in the quadratic function showed a moderate positive correlation with performance, while those at the high end of emotional stability had a moderate negative relationship with job performance.

The studies examining the nonlinear relationship of personality and job performance are somewhat inconclusive, and more research needs to investigate this issue. More personality variables and performance dimensions need to be evaluated to find the true relationship in different contexts. This becomes important in a selection context, when top down decisions are made using personality tests. For instance, if conscientiousness is only useful up to a point, candidates at the high end will be inappropriately selected over individuals with a moderate level

of the trait. This has a tremendous impact in the practical use of personality measures, and research needs to accelerate its investigation of these nonlinear relationships.

These studies investigating moderating variables help allow researchers and practitioners to understand the usefulness of personality variables in a work setting. Certain situations may require emphasis of different performance dimensions, which in turn requires different personality antecedents to be measured. A careful consideration of the factors will result in the most effective use of personality measures.

Models of Job Performance

Evidence has been presented above on the nature of personality and job performance in addition to the complex relationship between the two constructs. However, one also needs an operational model to explain how these relationships occur. In a comprehensive model of job performance, Schmitt, Cortina, Ingerick, and Wiechmann (2003) explain the two main individual difference determinants of performance: can-do and will-do factors. The can-do factors, which represent maximal performance, include general cognitive ability factors (i.e., *g*). The will-do factors, reflecting typical performance, consist of personality and integrity factors. These two factors influence one's ability to contribute to the organization because they need to be both able and motivated to perform. The can-do and will-do variables are proposed to lead to declarative knowledge (knowledge of facts and things), procedural knowledge or skill (knowing how to do something), and motivation (including what to do, how much energy to put forth, and for how long). Performance consists of the behaviors that directly result from one's declarative knowledge, procedural knowledge, and motivation. These behaviors can then lead to distal outcomes such as customer satisfaction, withdrawal behaviors, and productivity (see Figure 2). The knowledge, skill, and motivational proximal determinants of performance were first outlined

by Campbell et al. (1993), and have been shown to mediate the relationship between distal individual differences and performance (Borman, White, Pulakos, & Oppler, 1991; McCloy, Campbell, & Cudeck, 1994). It is critical to note that the types of knowledge, skills, and motivation required will depend on the performance domain (Motowidlo, Borman, & Schmitt 1997). Figure 2 shows how personality variables mainly impact contextual performance through their influence on the procedural component of the job. Conversely, ability variables exert their influence on task proficiency through learning technical knowledge. The following sections describe how the antecedents differentially predict task and contextual performance.

Motowidlo et al. (1997) proposed a model where personality variables impact contextual performance through their influence on contextual habits, skills, and knowledge. Conversely, cognitive ability variables impact task performance through their influence on task habits, skills, and knowledge. The task and contextual skills, knowledge, and habits can be synonymous with declarative, procedural, and motivational mediators in the performance model.

Task-related behaviors are typically predicted well by ability and experience-related individual differences (Hunter & Hunter, 1984) and less well by personality variables (Cortina, Goldstein, Payne, Davison, & Gilliland, 2000). Task related behaviors are predicted well by cognitive ability variables because intelligent people learn job knowledge more quickly and more thoroughly, while experienced people have more opportunity to learn job-relevant knowledge and skills (Schmidt & Hunter, 1998). There exist considerable evidence for cognitive ability variables as valid predictors of performance (Schmidt & Hunter, 1998); however the focus of this study is the effect of personality variables on contextual performance. Therefore, the personality and contextual performance relationship will be explored in greater depth.

Models of Contextual Performance

In a meta-analytic review of personality variables and contextual performance, Borman, Penner, Allen, and Motowidlo (2001) found evidence that the personality factors of conscientiousness and dependability correlate more highly with contextual performance than with task performance. Additionally, Motowidlo and Van Scotter (1994) found that other personality variables, such as cooperativeness and work orientation had significantly higher correlations with contextual performance than with task performance. This provides evidence for the different paths between individual level antecedents and performance dimensions, but one must also consider how personality variables exert their influence on mediators and contextual performance.

Motowidlo (2003) explains the influence of personality variables on the procedural knowledge aspect of the performance model. Personality factors can relate to contextual performance dimensions through the consistency and fit between one's typical response to work situations and the desired response in that situation. Therefore, an individual with a certain belief towards correctly responding a certain way to a work situation has more knowledge about how to effectively handle that situation. To test this explanation, Schmitt, Motowidlo, DeGroot, Cross, and Kiker (1996) studied the relations between customer service knowledge, customer service performance, and extraversion in a sample of sales associates in a retail chain. Customer service knowledge was measured through a situational interview that asked associates how to handle various situations with customers. The results indicated that while extraversion was correlated with performance, customer service knowledge provided greater incremental variance in predicting performance than extraversions provided over and above knowledge. This study provided evidence for the explanation that personality variables are mediated by knowledge in

how to respond to situations in the prediction of performance. Motowdilo, Brownlee, and Schmitt (1998) extended this study by testing all FFM personality variables, including ability and experience variables, and testing customer service skill through role-play simulations. Results revealed significant paths from (a) extraversion, ability, and experience to knowledge; (b) from ability, experience, emotional stability, and knowledge to skill; and (c) skill to knowledge. These results provide further evidence for the causal path between personality variables, knowledge, skill, and performance.

In a meta-analysis of the organizational and dispositional correlates of OCB, Organ and Ryan (1995) investigated several personality antecedents. Their results found more support for organizational variables, such as job satisfaction and organization commitment, than for the personality variables. Conscientiousness, however, was the one personality variables that correlated significantly with OCB. In a further investigation of conscientiousness and OCB, Hogan, Rybicki, Motowidlo, and Borman (1998) found that job and organizational characteristics moderate the relationship. Specifically, conscientiousness revealed a stronger relationship with OCB in jobs where promotion was unlikely versus jobs in which promotion was more likely to occur. In addition, they found that ambition (a facet of extraversion) was related to contextual performance in organizations where promotions were common. The authors explain this finding by stating that the relations between certain personality variables and contextual performance depends on how the organization rewards employees. In organizations that have promotions, employees will engage in status seeking contextual behaviors, therefore personality variables, such as ambition will be related to contextual performance. However, in organizations where promotion is unlikely, personality traits such as conscientiousness, will lead to contextual behaviors that involve gaining acceptance and approval of others. This explanation

involves the underlying motivations behind individuals engaging in contextual behaviors under certain conditions. The primary motive for contextual performance involved "getting along" with others in one instance, while the motivation in another situation involved "getting ahead".

Bettencourt, Gwinner, and Meuter (2001) investigated the relationship between attitude, personality, and customer knowledge antecedents with service-oriented forms of OCB. They cited the importance of studying OCB in a service environment, because employees with customer contact act as representatives of the firm (Schneider & Bowen, 1993), provide the strategic link between the external environment and internal operations by providing information on customer needs (Zeithaml, Berry, & Parasuraman, 1988), and can provide reliable and responsive service that will positively impact the customers' perception and loyalty to the organization (Parasuraman, Zeithaml, & Berry, 1998). The authors identified three dimensions of service-oriented OCBs: loyalty, service delivery, and participation. Loyalty reflects behaviors that correspond with allegiance to the organization, service delivery involves performing service procedures in a conscientious manner, and participation includes behaviors that reflect one's involvement in learning and suggesting new ways to improve the organization's processes. The results revealed that these separate dimensions were predicted by different antecedents. Attitudinal variables were key predictors of loyalty, customer knowledge was strongly related to participation, and personality variables were predictive of service-delivery OCBs. The personality variables included were specific compound traits that measure service orientation constructs. The previous studies that found minimal relationships between personality and OCB (e.g., Organ & Ryan, 1995) did not utilize specific, service-oriented personality variables and did not differentiate between types of OCB. This study used a construct oriented approach which yielded a greater relationship due to the theoretical correspondence between the constructs.

In their model, Motowidlo et al., (1997) also point out that personality factors can influence task performance and cognitive ability variables can influence contextual performance. Borman et al. (1991) provide evidence for this relationship when they found that dependability influenced job knowledge which then impacted task proficiency in a large Army sample. Including the personality variables accounted for more than twice the variance than a previous model tested by Hunter (1983) that just included cognitive variables in the prediction of overall effectiveness. To explain the methods through which the construct of conscientiousness can lead to greater task performance Schmidt and Hunter (1998) describe that conscientious people exert greater efforts and spend more time on task. In addition, conscientious individuals will pay more attention to detail and profit from vicarious learning (Bandura, 1977).

Although many of these studies explain how personality variables and ability variables differentially predict task and contextual performance, Alonso, Viswesvaran, and Sanchez (2001) found that cognitive ability variables predicted both task and contextual performance better than personality variables in a meta-analytic study of these relationships. While some personality variables were related to contextual performance, the meta-analysis did not provide strong evidence for the distinction between personality and contextual performance.

Clearly, there will be some overlap between the antecedents, mediators, and performance dimensions, but an overall pattern exists that provides a framework in which to study the prediction of job performance at a greater level of specificity. While the factors presented in the model provide a comprehensive framework through which individual differences drive job performance, it is critical to note that other situational variables influence job performance as well. In other words, the antecedents and mediators only represent a portion of the variance explained in job performance. In the comprehensive study conducted by Borman et al. (1991),

43

the tested model incorporating personality, cognitive ability, job knowledge, and task proficiency accounted for 31% of the variance ion job performance. Clearly, a large majority of variance in job performance is explained by situational factors, and distal antecedents should not be expected to predict a large amount of variance. However, identifying individual differences related to increased job performance early in the selection process can help an organization become more effective while keeping situational factors constant. Some situational factors can be quite difficult to address and change, thus making the identification of people that can provide positive contributions to performance across situations is critical to promote the organization's goals.

<div align="center">Customer Service Behavior and Personnel Selection</div>

As the service sector has grown, it has become critical to understand the drivers of performance in a service environment. This is particularly important for large companies that operate several dispersed business units. The focus on customer service has even become a primary strategy for companies outside of the service sector (Peter & Waterman, 1989). Identifying and hiring top talent to run those units becomes a key driver for success. The emphasis of using employees to drive the customer service goals of the organization has provided many human resource practitioners a strategic role in their organization (Huselid, 1995). The following section will describe how customer service behavior is defined, measured, and what types of selection instruments have been used to identify individuals that share characteristics that drive service performance.

While there are several other strategies to increase customer service, such as improving organizational climate conditions (Schneider, Wheeler, & Cox, 1992), the main focus here is on the personnel selection strategy. To the extent that customer service is a dispositional individual-differences variable, this approach is appropriate (Schneider & Schmitt, 1986). It should be noted

that selecting employees with service orientation is not the sole answer to promote quality service in the organization. Employees should be provided adequate equipment, staff, flexible rules and policies, and a compensation system that rewards performance (Schneider, 1980). Therefore, to support the goal of providing quality customer service, the strategies to improve service should not stop at the selection stage; however, providing the organization with the appropriate talent can only enhance this goal.

Defining Customer Service

Customer service behavior is defined as any activity of employees specifically directed toward affecting service quality (Ryan & Ployhart, 2003). The nature of services are distinguished from goods producing organizations in three primary ways: intangibility of services, the simultaneity of production and consumption of services as goods, and the coproduction feature of services in which active customer participation influences the production of a service (Schneider, 1990; Schneider & Bowen, 1985). There exist several others types of distinctions that distinguish service environments; however the point here is that the nature of services is vastly different and less clear cut as many goods producing jobs.

Measuring Customer Service

The measurement of services can be quite cumbersome considering the intangibility aspect of services and that it is subjectively evaluated by customers under several different circumstances (Boulding, Kalra, Staelin, & Zeithaml, 1993). The conceptualization of service performance is defined differently among researchers. The industrial/organizational psychology literature has defined customer service performance based on job analysis and what behaviors are expected of employees to deliver good service (e.g., Hogan, Hogan, & Busch, 1984; Frei & McDaniel, 1998). The service management literature, however, focuses on the customer's

perspective and service quality is related to how well the service *received* met the customer's *expectations* (Parasuraman, Berry, & Zeithaml, 1991). Therefore, depending on the literature, an individual's customer service is either determined by their supervisor or by the customers they serve. The difference between the desired level of service performance and what is deemed adequate in the eyes of the customer is known as the *zone of tolerance* (Parasuraman, Berry, & Zeithaml, 1991). In other words, a customer is always considering other factors that may allow them to tolerate with adequate performance (e.g., lunch rush in a restaurant) that will alter their expectations of performance. Despite the differences in the literature considering the conceptualization of service performance, most research has utilized the SERVQUAL dimensions identified by Parasuraman, Zeithaml, and Berry (1985). The following five dimensions are included in this model:

1. *Tangibility* refers to the physical appearance of the store and service personnel

2. *Responsiveness* reflects to the readiness and attentiveness to provide service for a customer

3. *Assurance* reflects the customer's confidence and trust that the service provider is competent and capable

4. *Empathy* is how well the service provider can understand the customer's needs and expectations in order to provide customized service

5. *Reliability* reflects whether the service provider can provide the service correctly the first time or quickly fix problems as they arise

A SERVQUAL research instrument has been created and utilized in the literature (Pasuraman et al., 1998) that contains paired expectancy and perception items along these dimensions. The difference between the scores (i.e., what the customer expects in a service encounter vs. what they received) are calculated to reveal quality of service and rolled up along the five different dimensions.

46

While the service management literature uses the SERVQUAL measure for criteria collection, the industrial/organizational psychology literature rarely uses customers when collecting criteria data. Instead, customer service is often measured via supervisory ratings of employee behaviors on service dimensions, since the focus is on the individual behaviors of the employee in this literature. This focus is possibly due to the defining feature of performance in that it consists of controllable behaviors of the individual. Many different features of the service experience can influence the customer's perceptions which are out of the immediate control of the employee (e.g. décor, location, architecture, product options). In addition, the customer may have somewhat of a halo effect that can bias their ratings of the service provider's performance. For instance, if a customer did not like the food at the restaurant they may rate the service provider poorly, regardless of the level of attentiveness and friendliness they exhibited.

Within this employee-centric definition, service performance entails aspects of both task and contextual behaviors. An employee can execute operational procedures in order to meet customers' expectations (task performance), but there also exist opportunities where they can perform roles outside of their job responsibilities to help a customer (contextual performance). Kehoe and Dickter (2006) distinguish service performance by the perspectives of four stakeholder groups: customers, supervisors, the organization, and the service provider. These four different perspectives contain separate components of service performance (see Table 6). Some of these stakeholders have competing objectives (e.g., supervisors wanting efficient operations vs. customers valuing personalized attention) while others are often aligned. Future research should evaluate the similarities and differences in the sources of customer service performance to better understand this relationship.

Just as the measurement and definition of overall job performance is cumbersome; the customer service construct faces the same issues among researchers and practitioners. The employee, supervisor, and customer may all have different definitions and conceptualizations of this construct. Similar to job performance, the dimensions and characteristics of customer service measures should be well defined in any research attempt.

Personality and Customer Service Performance

Despite the abundance of research on service management, there is surprisingly little published research on the selection of customer service employees (Ryan & Ployhart, 2003). There exist several selection instruments created by test publishers and consulting firms, however the published research associated with these tools does not reflect their widespread development and use. Furthermore, the limited published research has largely been done by a few of the major testing and consulting houses.

Some pre-employment selection measures aim to assess broad normal adult personality constructs, such as the FFM, without a desire to predict specific facets of job performance. The goal of this kind of measurement is to adequately and reliably measure the broad construct. Another measurement strategy involves assessing a combination of individual traits related to specific types of job performance. These types of measures are known as criterion focused occupational scales (COPS), as their emphasis is on the prediction of a specific criterion (Ones & Viswesvaran, 2001). Examples of these are integrity tests, customer service scales, and stress tolerance scales. These instruments measure compound traits and reveal higher criterion-related validities that FFM traits (Hough & Ones, 2001).

Ones and Viswesvaran (2001) describe four defining characteristics of customer service scales: (1) they are paper and pencil or computerized instruments containing items similar to

those found on personality scales, (2) they were specifically developed or keyed to assess personality constructs for customer service work environments, (3) they were designed for use with job applicants, (4) they were designed to predict customer service performance. Examples of these scales include the PDI Customer Service Inventory (McLellan & Paajanen, 1994), Hogan Personality Inventory Service Orientation Scale (Hogan & Hogan, 1992), and the London House Customer Relations Scale (London House, 1992) (see Whetzel & McDaniel, 2006 for a review of additional service measures).

One of the first attempts to define and measure an employee's ability to provide quality service is work done by Hogan et al. (1984) in their development of a measure of service orientation. This measure was created by using items in the Hogan Personality Inventory to tap constructs related to service performance. Through their research into nursing aides, they identified three dimensions that underlie service orientation: virtuous, empathetic, and sensitive. The items chosen in the service orientation scale to predict this type of behavior included items from the following HPI scales: adjustment (emotional stability), sociability, and likeability. This study provided some initial evidence for the criterion-related validity of service orientation scales, however future work needed to evaluate the construct validity in additional populations.

In a review of 13 published studies, Hurley (1998) found that extraversion, agreeableness, and adjustment were the primary predictors of customer service. This study was one of the first attempts to investigate the service orientation personality as a construct. Frei and McDaniel (1998) performed a meta-analysis that revealed moderate criterion-related validities (ρ = .24) for customer service instruments which then increased substantially after correcting for range restriction and unreliability (ρ =.50). The service orientation tests primarily correlated with the FFM traits of agreeableness, emotional stability, and conscientiousness in Frei and

McDaniel's (1998) meta-analysis. These three FFM traits were also found to correlate with customer service measures in a similar study that examined this construct (Olesen, McDaniel, & Snell, 1998). These findings contradict Hurley's (1998) explanation of extraversion as a predictor of service performance. In fact, Stewert and Carson (1995) have found that a negative relationship exists between extraversion and performance in customer service occupations. Overly social employees may forget to perform the procedures in their job due to their proclivity to interact with others and not follow through on assigned tasks. This suggests that more research needs to investigate the extraversion-job performance relationship in a service environment.

A more recent meta-analysis of customer service scales (Ones and Viswesvaran, in press) using multiple performance dimensions (e.g., ratings of overall job performance, customer service ratings, rehirability ratings) and corrected some the meta-analytic procedures performed by Frei and McDaniel (1998). The operational validities for customer service scales ranged from .16 (rehirability ratings) to .42 (avoiding CWBs), with a rather strong prediction of customer service ratings, .34 (see Table 7).

The construct validity of customer service measures were also explored in this meta-analysis to provide information about the relationship between personality traits and their incremental validity when used with other selection instruments. Results indicated a small, negative relationship with cognitive ability, and the strongest relationship with agreeableness measures ($\rho = .70$). As found in Frei and McDaniel's (1998) meta-analysis, the three strongest FFM correlates of service orientation were agreeableness, emotional stability, and conscientiousness, in that order. There was a strong correlation with Integrity tests ($\rho = .47$), however it wasn't high enough to reveal overlapping of constructs. While the two tests both measure the same three personality traits, they differ in the relative weights of those traits, in that

customer service scales are heavily loaded with agreeableness while integrity tests are mainly

loaded with conscientiousness.

When used with other personnel selection measures, customer service scales provide

incremental validity when added to the selection system. The validity of a selection system is

maximized when using a customer service scale with a test of cognitive ability ($R = .67$) or

integrity ($R = .49$) or both ($R = .72$). It was also found that customer service scales revealed

higher validities than optimally weighted FFM scales in predicting performance. The authors

explain this findings by the fact that the predictive validity of customer service scales may be due

to a higher level factor (e.g., factor alpha), and not the variance associated with the FFM traits.

Once again, factor alpha reflects following social rules and the ability to restrain and control

impulses (Digman, 1997). The strong validity of customer service scales in the prediction of

CWB may give support for the relationship with this higher order construct. These results

provide considerable evidence for the utility of customer service instruments, while also

highlighting the complex nature of these instruments and their relation to other personality

constructs.

Just as moderators exist in the personality and job performance relationship, several

situational factors can impact the validity of customer service scales. McLellan and Hansen

(1997) found that customer service inventories are better at predicting customer service

behaviors than overall job performance. Frei (1997) found that the validity of a customer service

inventory greatly increased when the sample was limited to positions that dealt with customers

on a daily basis. In another study using the FFM as predictors and the SERVQUAL measure as

the criterion, Lin, Chiu, & Hsieh (2001 5l) found that a differential pattern of validities existed

among the different FFM traits and SERVQUAL dimensions. Specifically, the study found that

openness to experience predicted assurance, conscientiousness predicted reliability, extraversion predicted responsiveness, and agreeableness predicted both assurance and empathy. This reflects the findings provided by Bettencourt et al. (2001) who found different antecedents for the three different forms of service-oriented OCBs. Therefore, studying the customer service orientation-performance relationship at a more specific and aligned manner will increase the understanding of the construct just as it did the personality-performance relationship.

Current Study

Despite considerable efforts to research the relationship between personality variables and job performance, a debate still exists as to the usefulness of personality variables. Some researchers argue that the criterion-related validities are low and that the link between personality, jobs, and job performance is not well understood (Murphy & Dzieweczyynski, 2005). On the other hand, other researchers cite considerable meta-analytic evidence for the utility of personality variables, especially compound traits that are geared toward work settings (Ones et al., 2005). The debate should not continue to question whether personality variables are useful or not, rather an investigation of how and when personality variables provide value should be the appropriate question.

Developing a solid understanding of both personality constructs and criterion constructs is critical when investigating their relationship. Only with a clearer understanding of these constructs, along with how their relations differ across work situations, will we advance our theorizing, model building, and hypothesis testing (Hough, 2003). Research in this area will also be advanced by theoretically linking personality and performance dimensions (e.g., Bartram, 2005; Hogan & Holland, 2004), investigating the role of facets of the FFM (e.g., Paunonen & Ashton, 2001), including additional performance dimensions and outcomes (e.g., turnover,

customer service), and the interactive effects of personality variables (e.g., Witt et al., 2002). This current study will investigate these issues by analyzing the relationship among several personality variables and performance dimensions in an hourly restaurant population.

Research Questions

Several different conceptualizations of job performance exist, however the current data collected in this study will most likely reflect behaviors similar to contextual performance. In a service context, many of the critical behaviors that provide value for the organization reflect contextual performance, because the tasks are not as well defined as in production type jobs. The most recent dimensionality of contextual (or citizenship) performance will serve as a taxonomy for the study's performance criterion (Borman et al., 2001).

Hypothesis 1: The three dimensions of contextual performance: personal support, organizational support, and conscientiousness initiative will fit the supervisory ratings of job performance using a confirmatory factor analytic approach.

Throughout the research discussed about the personality and job performance relationship, it was apparent that taking a construct oriented approach would lead to stronger relationships between the two constructs. Both the Hogan and Holland (2004) and Bartram (2005) studies provided evidence that hypothesized relationships between the personality traits and performance factors were stronger than non-hypothesized relationships. This current study will take the same approach.

Hypothesis 2: Correlations between matched pairs of personality and performance factors will be higher than for non-matched pairs.

In jobs that require interpersonal interaction, such as the current study, three FFM traits have been shown to be correlated with job performance: conscientiousness, emotional stability,

and agreeableness (Mount et al., 1998; Hurtz & Donovan, 2000). Additionally, the customer service measures that have shown to be strong predictors of performance mainly tap these same three FFM traits (Frei & McDaniel, 1998). Furthermore, within the conscientiousness construct, the dependability facet, representing respect for authority and reliability, revealed the greatest relationship with interpersonal facilitation (Dudley et. al, 2006). These findings lend support for these three personality constructs to be related to performance in the current study.

Hypothesis 3. Personality scales related to conscientiousness, emotional stability, and agreeableness will be significantly correlated with job performance.

Although there have been a number of studies investigated personality traits' separate impact on performance constructs, little research has investigated the interactive effects of personality variables. Witt et al., (2002) found evidence that the relationship between conscientiousness and job performance is greater among workers high in agreeableness. Given this finding and the additional evidence that agreeableness is critical in service settings, the effect of conscientiousness will only be useful when agreeableness is high as well. A reliable, dependable worker will not be as effective if they cannot cooperate with others in an environment requiring interactions with others. The current study will analyze the interactive effects of the personality factors within this context.

Hypothesis 4. The relationship between performance and scales relating to conscientiousness will be stronger for individuals that are high in agreeableness.

Several studies have found curvilinear relationships between personality traits and performance (La Huis et al., 2005; Le et al., 2007); however this is an emerging research area in this field. The lack of conclusive evidence from previous studies limits the hypotheses in the current study. However, given this service context, certain scales should reveal a nonlinear

relationship based on its theoretical link with the performance dimension. These scales include sociability, agreeableness, and emotional stability. In the case of sociability, very social employees may interact too much with certain co-workers and guests that detract them from completing their other duties. At the same time, someone that is very shy and reserved will be unlikely to provide great customer service because of their reluctance to approach others and make conversation. In many service contexts it is important to be agreeable to get along with co-workers and customers up to a point, but being too yielding may limit one's ability to accomplish their tasks. Emotional stability may be useful to withstand customer complaints and team conflicts, but being too aloof and cold could have a negative impact on one's performance. Therefore, these personality scales should reveal a curvilinear relationship with performance.

Hypothesis 5. Sociability, agreeableness, and emotional stability will reveal a curvilinear relationship with job performance.

The current study has the advantage of studying the personality-performance relationship in a service environment, yet with separate job groups comprising a different environment that can reveal differential relationships. Specifically, the two separate groups involve customer facing jobs and non-customer facing jobs that interact in a team environment. Mount et al. (1998) found that agreeableness and emotional stability were stronger predictors in a team context than a customer service context. In addition to this finding, Rothstein and Goffin (2006) concluded that extraversion is the best predictor of team-related behavior and performance. These three personality factors are obviously strongly related to performance in a team environment, and will likely have different relationships with job performance than in the customer service facing jobs.

Hypothesis 6. Personality scales measuring extraversion, agreeableness, and emotional stability constructs will have a higher correlation with performance in team-based jobs than customer-facing jobs.

Despite the costly effects of turnover and the proposition of personality tests to prevent this behavior, little systematic research has been done on this topic. Without previous research to guide this hypothesis it will be difficult to predict the personality scales associated with turnover. However, certain personality constructs should be related to an individual's departure or termination from the job based on theoretical grounds. In the context of a restaurant, an individual's level of drive and energy (a facet of extraversion) is important to keep pace with the customer's demands, therefore drive and energy should be predictive of turnover. As an hourly employee, following the strict rules and regulations is important to carry out the assigned tasks to meet the customer's and supervisor expectations, therefore facets of conscientiousness dealing with obeying rules should be predictive of turnover as well. Finally, remaining calm and stable in the midst of a hectic environment should prevent someone form leaving due to the stress associated with work, while also preventing one from making mistakes that could lead to termination. Based on this argument, emotional stability should also be predictive of turnover.

Hypothesis 7a. Drive and energy, acceptance of authority, and emotional stability will significantly decrease the rate of turnover.

In the restaurant industry, tenure length is different for hourly employees due to the high level of turnover in the industry as a whole. The industry employs many seasonal workers, workers in between careers, and students working towards a different career. Due to the nature of these workers, retention is critical for the restaurant industry. An organization that retains an hourly employee longer than ninety days can benefit from their organizational knowledge that

they use in their everyday work and that they can share with others. The aforementioned personality variables (drive and energy, acceptance of authority, emotional consistency) should be critical determinants of an hourly employee's rate of turnover within the first ninety days.

Hypothesis 7b. Drive and energy, acceptance of authority, and emotional stability will significantly decrease the rate of turnover within the first ninety days of employment.

While turnover as a whole is a critical business issue for organizations, several different reasons exist for an individual to leave the organization and those types of reasons can be associated with certain personality constructs. Involuntary turnover involves an individual being terminated from an organization due to poor performance or violations of rules and policies. An hourly employee with a high degree of acceptance of authority should be able to follow rules and standards; therefore it should be predictive of involuntary turnover.

Hypothesis 7c. Acceptance of authority will significantly decrease the rate of involuntary turnover.

Due to the volatile nature of employment within a high turnover industry, many hourly employees leave the job without appropriate warning or particular reason. This type of turnover is often referred to as job abandonment, because the employee voluntarily withdraws their employment without sufficient notification or reason. An individual may abandon their job due to their inability to keep up with the demands. Working in a fast-paced, high stress environment may cause some employees to become disenchanted with the job and voluntarily leave. However, someone with a higher level of drive and energy or emotional consistency should be able to withstand the demands of the work environment and stay longer. An employee with a lower acceptance of authority may be more inclined to leave without reason or notice, because they share little commitment and loyalty to the organization and reject the formal procedures

associated with the job. Therefore, these personality constructs should be associated with job abandonment.

Hypothesis 7d. Drive and energy, acceptance of authority, and emotional consistency will significantly decrease the rate of job abandonment.

In Schmitt et al.'s (2003) performance model, the performance behaviors relate to several different outcomes. Therefore if an employee exhibits certain performance behaviors then the result will involve important outcomes to the organization. A critical outcome in the service and restaurant industry is customer service. When a customer leaves satisfied with their experience, this will likely increase their loyalty to return and tell others about the organization. These customer behaviors can then be related directly to the organization's financial performance and viability. According to the performance model, employees must first exhibit customer service behaviors in order for the customer satisfaction outcome to impact the organization.

Hypothesis 8. Stores that have higher mean scores on personality variables related to customer service will reveal higher mean scores on guest service performance, which will then reveal higher customer satisfaction scores.

CHAPTER 2

METHOD

Participants

Archival data from 9,800 employees to a large, national restaurant chain that completed

the Service Questionnaire (SQ) as part of the selection process will be used in this study. Out of

the participants providing demographic data, the mean age of the sample was 23 years old, with

58% ($n=4,254$) of the participants being female. Most of the sample was White (78%; $n=5,574$),

with others being African American (12%; $n=884$), and Hispanic (7%; $n=472$). Among the type

of restaurant workers, 68% ($n=6,654$) applied for "front of house" positions (e.g., servers,

bartenders, hosts), while 24% ($n=2,326$) applied for "back of house" employees (e.g., cooks,

utility workers), and the remaining 8% ($n=821$) applied for training positions. Among the

employees involved in a performance review, 77% ($n=2,251$) were in "front of house" positions,

and the remaining 23% ($n=679$) were in "back of house" positions. All of the participants

completed the SQ as applicants during part of their selection process or for promotional

opportunities. Data was collected from applicants and incumbents taking the SQ from February

2004 to February 2007.

Measures

The Service Questionnaire (SQ) is a personnel selection test that is designed to evaluate

personal work styles, predict customer service and effectiveness in team settings, and provide job

relevant developmental information for training (Batrus Hollweg International, 2005). The SQ

was developed for individuals being considered for positions that require teamwork and

interpersonal skills. The SQ comprises five scales adapted from the Guilford-Zimmerman

Temperament Survey (GZTS) and the Differential Factors Opinion Survey (DFOS). Both the

GZTS and the DFOS have been used extensively in business and industry for the selection and development of successful performers for the more than 25 years.

The GZTS has gone through numerous studies that provide support for their criterion-related validity in various settings in addition to construct validity studies that provide support for its factor structure (Guilford, Zimmerman, and Guilford, 1976). The DFOS was an outgrowth of a very comprehensive factor-analytic investigation of interests (Guilford, Christianson, Bond, & Sutton, 1954). Relatively less research has been conducted on the DFOS; however the scale used in the SQ has received support for its validity and reliability in a work setting.

The five scales included in the SQ are labeled drive and energy, acceptance of authority, sociability, friendliness, and emotional stability. The publishers of the SQ describe these five scales as follows:

A. *Drive and Energy* -quickness of pace, responsiveness, sense of urgency and action orientation.

B. *Acceptance of Authority* - willingness to follow rules and regulations and to work systematically in a structured environment

C. *Sociability* - willingness and ability to interact with others, to be communicative and to initiate conversations

D. *Friendliness* - willingness to work alongside others and deal with people in a friendly, cooperative manner.

E. *Emotional Consistency* - consistency of mood, tolerance for frustration, optimism and tendency to maintain composure under pressure.

The Drive and Energy, Sociability, Friendliness, and Emotional Stability scales were adapted from the GZTS and the Acceptance of Authority Scale was adapted from the DFOS Need for Freedom scale.

Each of the five scales consists of 30 items, resulting in a 150 item test (see sample items in Appendix A). Individuals respond with a "yes", "no", or "?" response to each item, while the

test instructs the test taker to avoid making too many inconclusive ("?") responses. Each response receives a "1" or a "0" score which is then added to establish a scale and overall total score, with higher scores indicating that a certain individual is more likely to behave in accordance with the respective scale. The Acceptance of Authority scale is negatively scored in that lower scores indicate a higher acceptance of authority. All other scales are scored in the positive direction.

The test manual for the SQ cites examples of the criterion-related validity of the SQ in predicting job performance in various service settings such as restaurants, hotels, call centers, and retail organizations (Batrus Hollweg, International, 2005). An independent study conducted with the SQ found that it predicted performance among restaurant workers (Griffin, 1995). In particular, the study found considerable support for the Drive and Energy scale. The evidence provided in the manual and the published study lends support for the tool's predictive utility, especially in a restaurant environment.

The internal consistency reliability estimates were provided in the manual. The alpha coefficient ranges from 0 to 1 and indicates the homogeneity of the items within each scale. The coefficient alpha for each scale is as follows: Drive and Energy (.82), Sociability (.84), Emotional Stability (.88), Friendliness (.81), and Acceptance of Authority (.76). Most of these coefficients hover around the acceptable range (.85) for the reliability of measures in selection settings (Gatewood & Field, 2001), and they are similar to other personality measures published and used in the literature (e.g., Hogan & Holland, 2003). Another way to determine reliability involves assessing the stability of a measure over time. A common way to estimate this is by testing individuals on the same scale at different points of time. The one year and three year (respectively) test-retest reliability coefficients were provided for the Guilford-Zimmerman

Scales: Drive and Energy (.67;.47), Sociability (.71;.63), Emotional Stability (.71;.62), Friendliness (.65;.44) (Guilford, Zimmerman, and Guilford, 1976).

Several validity studies on the GZTS have provided some relationships between the SQ scales and the five factor model (FFM) constructs. In a thorough review of major personality tests, Hough and Ones (2001) classified all personality scales within the FFM taxonomy. The four scales in the SQ that were adapted from the GZTS were included in this classification. The drive and energy scale was related to the activity/energy facet of extraversion, while the sociability scale was related to the sociability facet of extraversion. The other two scales were considered to be compound traits of two FFM constructs. The friendliness scale was related to agreeableness (positive) and conscientiousness (positive). The emotional stability scale was related to emotional stability and extraversion (both positively related). Despite their classification into compound scales, the content of the friendliness and emotional stability scales are mostly related to agreeableness and emotional stability, respectively. Therefore the drive and energy and sociability scales will be related to extraversion and its facets; the emotional stability scale will be related to the emotional stability FFM trait; and the friendliness scale will be related to the agreeableness FFM trait.

The acceptance of authority scale has not been directly compared to any FFM traits, however based on the description provided by the DFOS manual (Guilford, Christensen, & Bond, 1993) and Batrus Hollweg International (2005) it can be mapped based on its content to a facet of the FFM. The original scale, titled, need for freedom, contains four clusters of items that measure the following factors according to the original manual: aversion to organizing, nonconformity, independence and disorderliness. Considering that the scale is reverse scored, the original authors describe a low score on the scale would reflect someone that likes order,

systems, organized life, and accepts controls. This scale description reflects two facets of conscientiousness: order and traditionalism. Order reflects the tendency to apply structure to one's working environment, and being well-organized, planful, thorough, detail-oriented, and methodical (Stewert, 1999). A recent empirical investigation of the structure of conscientiousness described order as emphasizing planning and organizing, while the traditionalism facet represents people who comply with current rules, customs, expectations, and dislikes changes and challenging authority (Roberts et al., 2005). The latter facet seems to match the Acceptance of Authority scale best; therefore Acceptance of Authority will be related to the traditionalism facet of conscientiousness within the FFM framework.

The SQ was administered to external applicants applying for an hourly position or internal candidates applying for a different hourly position within the restaurant. The selection process involves completing an application for availability to work, then a screening interview with a restaurant manager, following that the SQ is administered, and a final interview is conducted by another restaurant manager before a hiring decision is made. Most candidates have to pass the application and screening interview in order to be administered the SQ, therefore, some applicants did not take the SQ as part of the selection process. The restaurant general manager assimilates the information from the interviews and the SQ to make a hiring decision. The SQ was completed on paper by the applicants and then entered into the restaurant's internal computer system through the back office computer. Company and position specific norms were applied through a computer scoring system that provided information regarding how the applicant's scores compared to top performing hourly employees on the SQ scales. For the purpose of this study, only raw scores on the SQ scales will be evaluated instead of the normative benchmarks.

The performance measures included in this study were collected as part of the organization's semi-annual developmental process for hourly employees. The employee's most recent performance review information was included in the study. Feedback from this process would be used to provide coaching and training for employees. The purpose of these performance ratings were not for making any administrative decisions such as increasing wages or providing bonuses. These performance factors were deemed critical as they related to hourly employees carrying out the organizations' values and goals. Therefore, they are appropriate measures of job performance as they have met the characteristics outlined in previous sections. As a general rule, employees would have to be employed for at least two months to be reviewed.

Nine dimensions of performance were deemed important for hourly employees and were rated by their immediate manager. These dimensions include: Grooming Standards/Appearance, Reliability, Fun, Ability, Guest Service, Team Player, Initiative, Stamina, and Cooperation. See Appendix B for descriptions of each dimension.

Manager's that were familiar with the hourly employees rated them on each dimension using a 3 point scale that provided behavioral examples for Outstanding, Successful and Needs Improvement. An employee would receive 1 point for an outstanding rating, 0 points for a successful rating, and -1 point for a need improvement rating. After each manager rated their respective employees, the cumulative totals (summed across performance dimension) were calculated for each store. This process provided a forced ranking distribution within each store. Employees that fell in the bottom 20% received a C rating, the middle 60% received a B rating, and the top 20% received an A rating. The management team would calibrate the results of the independent ratings and adjust employee's ratings if necessary (i.e., move up a letter grade). The

forced distribution percentile was not affected by the management team's adjustments to the overall ratings.

In addition to rating the individual performance dimensions, managers provided an overall rating of the present fit for each employee in their respective position. The employee could belong in one of the following groups: promote short term, promote long term, keep in position, questionable in position, move out, or transfer laterally. Manager's completed this independently.

Customer satisfaction indexes (CSIs) are calculated each month for every store across the organization. These scores are generated from customers visiting the stores and filling out a survey rating various aspects of their experience. The CSI scores range from 0 to 100%, and represent the percentage of customers providing the store with the top rating in the customer service measure.

Procedure

Several steps were required in order to test some of the proposed hypotheses before data analysis began. First, the job performance dimensions were grouped by the author into the three proposed dimensions of contextual performance. A close examination of the contextual performance definitions and the study's performance definitions were evaluated to make the assignments.

Next, in order to identify which SQ scales and performance dimensions were aligned a rating process was employed similar to Robertson and Kinder's (1993) study involving the alignment of personality scales and performance dimensions. This rating process was used, because each performance dimension could have many SQ scales associated with it, and a SQ scale could have many performance dimensions associated with it. Therefore, a one-to-one

mapping process would not yield the desired results for the hypothesis. All five SQ scales and all nine performance dimensions were utilized in this process. A group of subject matter experts (SMEs) from Batrus Hollweg, International that were familiar with the SQ were asked to map the predictor and criterion scales. The SMEs had extensive experience interpreting the scales in a work context, and had experience identifying performance dimensions (similar to the current study) for many organizations. The SMEs were sent the definitions and behavioral indicators for each of the performance dimensions, along with a matrix (with SQ scales on one axis and the performance dimensions on another) and instructions for them to indicate the strength of relationship between the SQ scales and the performance dimensions (see Appendix C). A four-point scale (from zero = *slight (or no) relationship* to 3 = *very strong relationship*) was used for this rating process. A total of 9 SMEs completed the task and the mean ratings for each possible mapping were evaluated. Analysis of the results indicated that 14 mappings had a mean over 1.5 and the median for 13 of the mappings were over 2. Because a rating of 2 indicated a "strong" rating, these 14 mappings were considered to be aligned. This is not to say that the other SQ scales and performance dimensions were predicted to be unrelated, rather this process just identified the strongest expected relationships.

One of the hypotheses involved the differences between team based jobs and customer facing jobs. In the restaurant industry, these jobs relate to "front of house" and "back of house" positions. Front of house positions include jobs such as server, host, and bartender and involve direct customer interaction. The majority of the job is spent focused on serving and accommodating several guests at once. Back of house positions include cooks, expos, and other kitchen positions. The nature of this job requires close interaction with co-workers in order to cook, assemble, and present food items for the customer (or server to deliver to the customer).

Although the front of house positions require some cooperation among co-workers, the back of house position entails many more interdependent tasks and communication with each other resembling more of a team based environment (Guzzo & Dickson, 1996). Positions were captured at the time of the performance review and were grouped into the respective front and back of house categories by the author. For the hypotheses concerning turnover, some employees were not employed long enough to be reviewed, therefore positions were grouped based on the position the applicants tested for when they took the SQ assessment.

Termination reasons were collected for each employee that left the company. For the purpose of the hypothesized relationships, termination reasons associated with involuntary turnover and job abandonment were coded by the author. Some of the reasons associated with involuntary turnover include abusive language, violation of policy, and failure to perform job duty. Job abandonment included people who left early from the job (in training) and later in their employment without calling to notify the company of their departure.

The final hypothesis involved another level of analysis that moved from the individual level to the store level. The most recent performance review cycle (November 2006) was used as the performance metric at the store level due to the largest majority of employees rated in this review cycle, thus increasing the sample size. Any employees that were active during the review cycle were used for calculating the average SQ scale scores and the average organizational support performance factor. Each store had to include data form at least 5 employees in the performance factor and SQ average scores. This number was used to balance the sample size requirements, while also understanding that stores with fewer than five representative employees could be influenced by idiosyncratic error. The CSI score for each store for the relevant month (November 2006) was utilized for the analysis.

67

Analyses

A confirmatory factor analysis was performed to test the first hypothesis that proposed a three factor structure of contextual performance. Fit indices were examined to determine if the three factor structure fits the data.

The second hypothesis that anticipated higher correlations between the matched pairs of personality scales and performance criteria was evaluated by comparing zero-order correlations. The effect size difference was evaluated to understand the practical difference between the matched and unmatched pairs.

The third hypothesis involved zero-order correlations between the emotional stability, acceptance of authority, and friendliness scales on the performance dimensions. Significant tests were conducted, and practical significance was evaluated through effect sizes (Pearson's r). A comparison of the meta-analytic correlations of personality scales and performance (Barrick et al., 2001) was used to determine the practical significance of the effect size. Separate analyses were conducted for the two main positions (e.g., front of house, back of house).

To investigate the interactive effects of the personality variables in hypothesis 4, moderated multiple regression was used. In this process the individual scales are entered first, and then the interaction terms (e.g., variable X_1*X_2) are entered next in a regression equation. Interactive effects are apparent when the interaction term accounts for significant variance above the main effects.

The curvilinear effects of the three proposed personality scales were tested through polynomial regression procedures. A quadratic function was tested in which the predictor value will be squared in a regression model. If the squared term accounts for significant variance above

and beyond the predictor value, then support for a curvilinear relationship is evident. Separate analyses were conducted for the separate positions.

The back of house and front of house job groups were used to compare the customer-facing vs. team-based work group hypothesis. The zero-order correlations among the drive and energy, sociability, friendliness, and emotional stability scales were compared between the two groups.

Survival/failure analysis was used to test hypothesis 7a through 7d. This type of analysis deals with the time it takes for something to happen: a cure, a death, an employee leaving. This analysis can compare groups (e.g., treatment and control groups in drug efficacy) for time to survival/failure as well as continuous variables, named covariates (e.g., age, experience on job, personality). When using the continuous variables, regression procedures are used that can also handle data in which the event has not yet occurred (i.e., people are still active at the end of the study, but will eventually turnover). This type of data is known as "right censored" data and employees that were still active at the end of data collection were considered to be the censored data in this study. The relevant event in the current study was turnover, involuntarily turnover, and job abandonment. The time period to turnover was measured in months for hypotheses 7a, 7c, and 7d, while it was measured in days for hypothesis 7b. A Cox proportional hazards model was used for all analyses because the SQ scales were used as covariates to predict the time to turnover. For hypotheses 7a and 7b, the position groups were used as categorical predictors to compare the turnover rates in each of the two positions. Log-likelihood chi square tests were used to test the effects of all of the covariates, and regression coefficients and odds ratios were evaluated to determine the effect of the individual covariates.

Finally, path analysis was used to test the path from the selected SQ scales to organizational support performance ratings to customer satisfaction ratings. This analysis was performed at the store level. Fit indices, multiple correlations, and path coefficients were examined to assess the model.

CHAPTER 3

RESULTS

The results are reported in order by each hypothesis. Descriptive statistics for the

variables included in each hypothesis are provided in the beginning of each section (see also

Tables 9-10). The contextual performance section reports the confirmatory factor analysis of the

first hypothesis regarding the three factor structure of the performance dimensions. Next, the

aligned correlation section reports the correlations between all of the SQ scales and performance

dimensions, including descriptive information for both. The following section provides results

for the three hypothesized correlations with the performance factors for each position. The

interactive effects section reports the moderated regression procedures, and the curvilinear

effects section provides results for the polynomial regression procedures. The position based

effects section reports the hypothesized correlations that are compared for the front of house and

back of house positions. The turnover section provides the survival/failure analysis results, and

the customer service performance model section includes the results of the path analysis

conducted for the stores.

Contextual Performance

In order to test the dimensionality of the performance data, a confirmatory factor analysis

was performed to test whether the proposed contextual performance taxonomy fit the data. A

three factor model of contextual performance was hypothesized, assigning the nine separate

performance dimensions to three contextual performance groups: personal support,

organizational support, and conscientious initiative. Based on the definitions and behavioral

indicators provided for each dimension, the author assigned each dimension to a contextual

performance group. The following assignments were hypothesized: personal support included

71

team player and cooperation performance dimensions, organizational support included grooming

standards, guest service, and fun performance dimensions, and conscientious initiative included

reliability, ability, initiative, and stamina performance dimensions.

Due to the robust sample size, the data was randomly split into two approximately equal

groups. Splitting the model enabled testing of the generalizability of the model by applying it to

two different sub-samples. The first sample was used to determine if any modifications should be

made, and the second sample was used to assess applicability of the modifications across

samples to provide evidence of generalizability.

Sample size was deemed more than adequate for both samples as there were more than

five individuals for each variable (Gorusch, 1983), and the sample size was over 300

(Guadagnoli & Velicer, 1988). There was no missing data. Assumptions of univariate and

multivariate normality were evaluated. Univariate outliers were determined by examination of z-

scores where the data were ± 3.29 standard deviations from the mean, which indicates a critical

value at a probability level less than 0.001. Multivariate outliers were identified utilizing

Mahalanobis distance, a statistic that estimates the multivariate distance between a given case

and sample means (called "centroids"). A conservative estimate of a multivariate outlier is

indicated by a value of the Mahalanobis distance exceeding the critical value in a chi square table

at a probability level of 0.001 (Tabachnick & Fidell, 2001). No univariate or multivariate outliers

were present among the performance dimensions. All of the performance distributions were

normally distributed, except for the initiative factor that was slightly positively skewed.

Therefore, more employees received lower ratings than higher ratings on that particular

performance dimension. The distribution of the data however should not impact the relationships

examined in these analyses because all of the possible responses were contained within a small

range (-1 to 1) with sufficient representation in each rating. Mulitcollineraity issues were not

present for the performance dimensions. Intercorrelations ranged from .23 to .47 among the nine

performance dimensions.

In order to determine model fit, appropriate fit indices, item loadings, squared multiple

correlations of the items, and modification indices were reviewed for each proposed model.

Maximum likelihood estimation was employed to estimate all models. LISREL 8.52 (Jöreskog &

Sörbom, 2000) was used to perform confirmatory factor analysis on all of the proposed models.

As recommended for CFA, multiple fit indices were reviewed to determine fit of the model

(Bollen, 1989). These fit indices included minimum fit function of chi-square, root mean square

error of approximation (RMSEA), non-normed fit index (NNFI), comparative fit index (CFI),

and standardized root mean square residual (SRMR).

In confirmatory factor analysis, a model is specified, parameters for the model are

estimated using sample data, and the parameters are used to produce the estimated population

covariance matrix. The model was specified by assigning each performance dimension to its

respective contextual performance factor. Next, the model was estimated using maximum

likelihood procedures. Estimation methods in confirmatory factor analysis attempt to minimize

the difference between the observed and estimated population covariance matrices. A "good fit"

of these matrices is often indicated by a non significant χ^2. A non significant χ^2 would indicate

that overall fit of the over-identified model (more data points than estimated parameters) is no

worse than the "perfect" fit of the just-identified version of the model (data points and

parameters are equal). In other words, the model being tested is not significantly worse than a

model that perfectly reproduces the sample covariance matrix. Therefore, low and non

significant χ^2 values are desirable and constitute a good fit of a model to the data. However, a

strong limitation of χ^2 statistic as a goodness of fit index is its sensitivity to sample size and assumptions underlying the χ^2 test statistic (Bentler, 1988). To better assess the strength of the model, various alternative overall model fit indices were reviewed.

One set of fit indices are known as comparative fit indices. An example of this is the Bentler-Bonnett (1980) normed fit index (NFI), which compares the fit of the current hypothesized model to that of an "independent model" in which all the relations between the variables are set to zero. This independent or null model can serve as a good base model against which to compare successive models. The purpose of the hypothesized model is to specify relationships between variables with the goal to achieve significant improvement in model fit, as reflected in the NFI. The NFI ranges from 0 to 1. Higher values (greater than .90) indicate an acceptable fit, while lower values (less than .85) indicate an unacceptable fit (Hu & Bentler, 1995). Due to the fact that the NFI may underestimate the fit of the model in smaller sample sizes, the non-normed fit index (NNFI) adjusts the NFI, by taking into account sample size (Bearden, Sharma, & Teel, 1982). The comparative fit index (CFI; Bentler, 1988) also assesses fit relative to other models, but uses a noncentral χ^2 distribution with noncentrality parameters. Interpretation of the *CFI* is similar to that of the NFI and NNFI in which values above .90 indicate a good fit to the data. These fit indices allow three different assessments of the model fit, with the NNFI incorporating degrees of freedom and the CFI comparing the fit relative to other models. The root mean square error of approximation (RMSEA; Browne & Cudeck, 1992) estimates the lack of fit in a model compared to a perfect model. RMSEA values closer to zero indicate a better fit, with values above .10 indicating a poor fit, values below .08 indicating an acceptable fit, and values below .06 indicating a close fit (Browne & Cudeck, 1992). There also exist fit indices based on the residuals. While the RMSEA compares the estimated model to a

perfect (saturated) model, the fit indices based on residuals compare the discrepancy between the

estimated model and the sample data. The root mean square residual (RMR) and the standardized

root mean square residual (SRMR) are the average differences between the sample variances and

covariances and the estimated population variances and covariances. RMR and SRMR have a

range from 0 to 1. Good fitting models have lower values, with .08 serving as a desired standard

(Hu & Bentler, 1999). It is recommended to report the *SRMR* and a comparative fit index;

therefore both of these values were captured and evaluated (Hu & Bentler, 1999).

Developmental Sample Model Estimation

As shown in Table 8, the hypothesized contextual performance model revealed a good fit

to the data, χ^2 (24, *n* = 1398) = 150.89, *p* < .05, as indicated by the comparative fit index (CFI) =

.98, non-normed fit index (NNFI) = .97 (Hu & Bentler, 1995), and the root mean square error of

approximation (RMSEA) = .06. All items loaded significantly on the designated factor in each

of the models at the 0.01 level and the model required seven iterations.

Modification indices indicated that the Fun performance dimension could load on the

personal support factor rather than the organizational support factor. Reviewing the definition

and behaviors associated with this dimension revealed some theoretical reasons why this

dimension could be included in the personal support construct. Many of the behavioral aspects of

the Fun dimensions included encouraging other co-workers and promoting fun within the work

team. This dimension was originally proposed to fit on the organizational support factor, because

it involved promoting the organization's culture of fun and enthusiasm. Model 2 was tested on

the same development sample to see if the model would improve substantially. All fit indices

indicated an improvement in fit of the model; however they remained in the same close fit range

and did not indicate a substantial improvement in fit. Therefore, the original model was retained for testing on the holdout sample.

Holdout Sample Model Estimation

Table 8 reveals that model 1 fit the second sample data well, similar to the developmental sample χ^2 (24, $n = 1377$) = 152.51, $p < .05$, as indicated by the comparative fit index (CFI), non-normed fit index (NNFI), the standardized root mean square residual (SRMR) statistic, and the root mean square error of approximation (RMSEA) (Hu & Bentler, 1995). The model required five iterations

The three latent factors were highly correlated with each other, indicating a higher order performance factor. The correlations between the observed factors, as shown in Table 9, are only in the moderate range (.54 - .60), however, providing support for keeping the factors separate. This finding confirms using the overall performance total as a higher order performance factor for analysis in addition to comparing results across the three factors. Means and standard deviations for the factors are also found in Table 9. Altogether, these results provide support for the first hypothesis.

Aligned Correlations

The second hypothesis proposed that the aligned correlations would be higher than the correlations that were not aligned. It was anticipated that there would be some meaningful differences in the magnitudes of the correlations between the five Service Questionnaire (SQ) scales and nine performance dimensions. Correlations were considered to be aligned if subject matter experts (SMEs) familiar with the variables anticipated the correlations to be strong based on their theoretical relationship with the performance dimension. As mentioned in the previous

section, 14 pairs of Service Questionnaire (SQ) scales and performance dimensions were predicted to have strong relationships based on an evaluation by the SMEs.

As mentioned above, the performance dimensions revealed normal distributions and no outliers were found. The SQ scales, however, were negatively skewed. The data points at the lower end of the scale were not due to incorrect data entry or improper sampling; rather the population distribution contained fewer lower values than higher values (Tabachnick & Fidell, 2001). This is a likely outcome, due to the fact that many individuals who choose to work in the restaurant industry are likely to possess a higher degree of the personality constructs measured. Another reason for the higher scores on each of the scales may also deal with the fact that many applicants already went through a pre-screen interview that may restrict the sample and variability within the scales. Deletion of these cases with lower scores on the scales would not only decrease sample size, but also leave out valuable data points that reflect the population distribution of the construct being inspected. By deleting these cases, information would be lost on the individuals that score within the normal population range on these personality constructs, thus artificially restricting the variability within the sample even more. Furthermore, alterations made to these data points would only be necessary for cases causing extreme influence on the data. Therefore, these data points were left in for the analysis. The following analyses should be evaluated in light of these points. There were no missing data for the performance dimensions or SQ scales.

Means and standard deviations for the SQ scales and performance dimensions are presented in Table 10 and correlations between the SQ scales are presented in Table 11. The intercorrelations between the SQ scales indicate that they are measuring separate constructs, with some scales that actually reveal negatively correlations with each other. While the factor

structure of the personality scales was not a focus of this study, it is interesting to see the relationship between these constructs and how they fit into the FFM. The correlations between all of the SQ scales and the performance dimensions are listed in Table 12, with aligned correlations in bold. The effect sizes across all of the correlations are low, but similar to the effect sizes found in the meta-analytic results of personality variables before correction for attenuation. The aligned correlations were slightly higher (mean $r = .02$) than the non-aligned correlation (mean $r = .01$), providing partial support for the second hypothesis. The aligned correlations were strongest for the Extraversion facets of drive and energy and sociability, while they were somewhat lower for the other three SQ scales. Overall, the correlations were higher, but not much practically different from the non-aligned correlations.

<center>Personality and Contextual Performance Correlations</center>

The third hypothesis proposed that the emotional consistency, friendliness, and acceptance of authority scales would reveal statistically significant correlations with the contextual performance factors. This hypothesis also involved reviewing these correlations for the two different types of positions. The three performance factors and the overall performance factor were normally distributed and did not contain any outliers. The SQ scales' distribution was discussed above. Table 13 provides the correlations for the total sample and then for each position group. For the entire sample, emotional consistency and friendliness were significantly correlated with conscientiousness initiative ($r = .04$, $p < .05$; $r = .06$, $p < .01$, respectively) and with overall job performance ($r = .04$, $p < .05$; $r = .06$, $p < .01$, respectively). The acceptance of authority scale did not have any significant correlations with the performance factors. As Table 13 shows, the correlations were stronger for the front of house positions than back of house positions. Due to the large sample, while some correlations were statistically significant, they

<center>78</center>

still revealed low effect sizes. However, they did reveal comparable effect sizes that have been reported for the meta-analytic observed correlations of five factor model (FFM) constructs and performance.

Table 14 shows uncorrected and corrected validities for each of the SQ scales and the contextual performance constructs. This table can be compared to the meta-analytic validities reported to measure the relative strength of the personality and performance relationship. Effect sizes are often dependent on the nature of the study, and it would be inappropriate to compare it to studies and constructs that do not have the same expected relationship to interpret the effect size. Corrections for attenuation were made by correcting for reliability in the SQ scales and the performance ratings. The validity coefficient is attenuated when measurement error is associated with both the predictor and the criteria. In other words, when two variables are perfectly reliable, the validity coefficient will be greater than when they are not (Nunnally, 1978). The coefficient alphas were used as the reliability estimates for the SQ scales, and Viswesvaran, Ones, and Schmidt's (1996) meta-analytic estimate of reliability for supervisory ratings (.52) was used to correct for reliability in the criterion. Table 14 shows that friendliness exhibited a similar effect size to previous meta-analyses, while the emotional consistency, drive and energy, and sociability were slightly lower than the meta-analytic results for the FFM. The acceptance of authority correlation with performance was substantially lower than effect sizes for conscientious constructs and facets reported in the literature. It is clear from the table that different patterns exist within personality constructs (e.g., drive and energy vs. sociability), across positions, and across performance dimensions. These findings provided only partial support for hypothesis 3.

Interactive Effects

Hypothesis 4 stated that an interactive effect would be apparent with the friendliness and acceptance of authority scales in predicting performance. In order to test this hypothesis, moderated multiple regression was used. The interaction, or cross-product of the predictors, indicates whether an interaction is present. If the interaction term explains significant variance after the individual predictors are entered, then an interaction is present. For the current study, the hypothesis assessed whether the relationship with acceptance of authority and performance was greater for employees who scored higher on friendliness. Before testing the effects, multivariate assumptions were explored. As mentioned before, some univariate outliers existed for the SQ scales, however no multivariate outliers were detected among the scales. The sample size was adequate to test the multiple correlation ($N > 50 + 8m$), and to test individual predictors and interaction term ($N > 104 + m$), where m is the number of predictors (Green, 1991). The formulas used for calculating an adequate cases-to-predictor ratio assumes a medium-size relationship and the following error rates, $\alpha = .05$ and $\beta = .20$.

The overall performance score was used as the dependent variable. The two SQ scales were mean centered before entering them into the regression equation and creating the interaction term to limit the strength of the relationship between the interaction term and the individual variables. The interaction term was created by multiplying the two individual SQ scales. The individual SQ scales (acceptance of authority and friendliness) were entered in Step 1 to control for their main effects, followed by the interaction term in Step 2.

The two SQ scales significantly predicted job performance in the first step ($R = .07$, $p < .01$) with the friendliness scale revealing the only significant relationship with performance ($\beta = .07$, $p < .01$). The cross product failed to add significant variance to the prediction of job

80

performance ($\Delta R^2 = .000$, *ns*) thus not supporting the hypothesis that an interaction between acceptance of authority and friendliness was present. Therefore, no simple effects were performed.

<center>Curvilinear Effects</center>

The fifth hypothesis explored the curvilinear effects of the sociability, friendliness, and emotional consistency scales. Polynomial regression was used to test these effects in all cases. In order to determine if a curvilinear effect is present the predictor is entered into the regression equation first, and then if the quadratic term of the predictor adds significant change to the multiple correlation, an interaction effect is present. In the current study, each of the hypothesized SQ scales was entered in Step 1, followed by their quadratic terms in Step 2. Table 16 presents the results of the analysis.

The sociability scale did not predict performance alone ($R = .00$, *ns*), while friendliness ($R = .06$, $p < .01$) and emotional stability ($R = .04$, $p < .05$) predicted performance at a statistically significant level. Adding the quadratic term resulted in a statistically significant explanation of variance of performance for sociability ($\Delta R^2 = .002$, $p < .05$) and friendliness ($\Delta R^2 = .001$, $p < .05$), however it did not yield a significant effect for emotional stability ($\Delta R^2 = .000$, *ns*). Therefore, there was a curvilinear effect for the sociability and friendliness scales, but not the emotional consistency scales, providing partial support for the fifth hypothesis. The same procedures were carried out for each of the position groups, and no curvilinear effects were found. To plot the forms of the significant quadratic equations, the unstandardized estimates from the second equation were used with standardized scores of sociability and friendliness. The plots revealed a U-shaped relationship between performance and the two variables. An inverted-

<center>81</center>

U relationship was expected, but the data reveals that performance increases at the lower and higher levels of the two personality constructs, while it is lower in the middle range.

Position Based Effects

The sixth hypothesis stated that certain personality constructs would be more important in a team-based environment than a customer facing environment. The team based positions were operationalized as the back of house positions, while the customer facing jobs included the front of house positions. The SQ scales that were predicted to be more valid in the team based environment included drive and energy, sociability, emotional consistency, and friendliness. Tests for assumptions of normality were already conducted and discussed above on the variables included in this analysis.

Correlations between the SQ scales and the contextual performance factors within each position group are listed in Table 17. The ranked performance score was also included in this analysis, and is derived from the within store ranking (from 0 to 1) of hourly associates based on their overall performance score. It is evident that a different pattern of correlations exist between the two position groups. For instance drive and energy was significantly related with personal support for back of house positions ($r = .09$, $p < .05$) but not for front of house positions ($r = .04$, ns), and the opposite relationship existed for the conscientious initiative performance factor ($r = .07$, $p < .01$ for front of house; $r = .04$, ns). This finding indicates that the personality variables differentially impact performance factors based on the context of the position. Overall, the SQ scales revealed stronger relationships with performance for front of house employees than for back of house employees (mean $r = .05$; mean $r = -.01$, respectively), thus not providing support for the sixth hypothesis.

82

Among front of house workers, the drive and energy, emotional consistency, and friendliness scales revealed the strongest relationship, while the sociability component did not share a positive relationship with performance (other than the organizational support factor). This finding replicates other studies, where the drive facet of extraversion shares a stronger relationship with performance than the sociability facet. Among the back of house employees, the drive and energy component revealed the only positive correlation with performance. Clearly, the drive and energy trait is related to the demands of the kitchen for these workers, but surprisingly the performance factor that is most influenced by this component is the personal support factor. Perhaps being a good team member requires a high level of effort and energy to share the tasks in the back of house. Although the opposite effects were found in this hypothesis, differential relationships did exist for the two different types of positions.

<center>Turnover Results</center>

The seventh hypothesis posited that several personality variables would be related to turnover. Survival analysis was used for each of the hypotheses. These techniques assess turnover in terms of the conditional probability of an employee leaving an organization. Some researchers have noted the advantages of using this type of analysis for turnover data (e.g., Harrison, 2002). Many of the assumptions of multivariate normality and linearity are not necessary for survival analysis, however when they are met, it increases the power and prediction when dealing with outliers. For all hypotheses the sample size was more than adequate which helped with the power for the analysis. Several univariate outliers for the SQ scales were found, but not deleted based on previous reasoning. One multivariate outlier was deleted from the sample used in hypotheses 7a and 7b. For all hypotheses data for employees hired before 2004 were deleted. These data were deleted because the SQ data collection began in 2004, and SQ

<center>83</center>

data representing employees hired several years ago may not be very accurate due to decreased reliability across time. There was no evidence of multicolinearity, as the SQ scales did not correlate highly with each other for any of the samples used for these hypotheses. Employees who were still active in the organization at the end of data collection were "right-censored" data points, because it was unknown when they would turnover.

Hypothesis 7a proposed that drive and energy, emotional consistency, and acceptance of authority would predict turnover rate. After deleting one multivariate outlier and 189 cases with hire dates before 2004, the remaining 9610 cases were analyzed. Of those 9610, 4249 of the employees turned over and 5361 were still active (censored data). Time was measured in months. Table 18 shows the results when entering the three SQ scales. A significant change in the model was realized when the predictors were entered, χ^2 (3, $N = 9610$) $= 15.34$, $p < .01$. Wald statistics were used to test the statistical significance of the individual predictors, and drive and energy was the only significant predictor of turnover ($B = -.015$, p $<.01$). The negative value of the coefficient indicates that an employee with more drive and energy has a greater probability of staying with the organization. The odds ratio reveals that this effect is rather small, however, and that probability of turnover is decreased by about 2% with each increase in the drive and energy score. An R^2 was calculated to provide a measure of strength of association based on the likelihood-ratio chi-square statistic (Allison, 1995). Once again, the association between the predictors and turnover are fairly small. Figures 3 and 4 reveal the plots of the survival and hazard functions at the mean of the predictors. The two plots indicate that the probability of turnover increases sharply through about the first 12 months of employment then the likelihood of turnover begins to plateau.

In order to see if the position group affects likelihood of turnover, another Cox regression was run with the position entered as a predictor. The position variable was significantly related to turnover (B = -.330, p <.01), and the odds ratio indicates that being in a front of house position decreases one's probability of turnover by 28%, thus suggesting back of house employees are more likely to turnover. Figures 5 and 6 reveal the survival and hazard functions for the two different groups, and it is clear that the back of house employees probability of turnover is greater, however it continues at the same rate of front of house employees thus not violating the proportionality of hazards assumption. Based on these results there was some partial support for hypothesis 7a, due to the significant effect of drive and energy predicting turnover, however the effect was rather small.

Hypothesis 7b predicted that the same three SQ scales would be related to the probability of turnover within 90 days. Time was measured in days for this hypothesis due to the smaller time frame. Table 20 shows that a significant change in the model was realized when the predictors were entered, χ^2 (3, N = 9610) = 24.99, $p < .01$. Among the individual predictors, drive and energy (B = -.015, p <.01) and acceptance of authority were significantly relate to turnover. The same negative relationship was found for drive and energy and 90 day turnover, however, these results suggest that a lower acceptance of authority is related to a decreased probability of turnover. Figures 7 and 8 show that the probability of turnover steadily increases across the ninety days in a linear fashion. Once again, only partial support was found for this hypothesis.

Hypothesis 7c expected acceptance of authority to be predictive of the rate of involuntary turnover. Employees that were still active were left in the sample as censored cases (because they could possibly be involuntarily terminated at a later date), while employees who were terminated for other reasons were left out of the analysis. These employees were not considered because

their termination status and reasons were actually known. This left 266 employees that were involuntarily terminated and 5292 employees that were still active at the end of data collection after deleting 175 employees hired before 2004. There was no significant effect for acceptance of authority as a predictor of involuntary turnover, χ^2 (1, $n = 5627$) = .59, ns. Figure 9 and 10 reveals a similar pattern as the general turnover group where the probability of involuntary termination rises quickly until about month 12 or 15, and then flattens out. These results reveal that hypothesis 7c was not supported.

Hypothesis 7d proposed that drive and energy, emotional consistency, and acceptance of authority would predict job abandonment. Similar to the involuntary termination hypotheses, employees that were terminated or left for reasons other than job abandonment were left out of the analysis. This left 2097 employees who abandoned their job, while 5361 were still active for this sample. A total of 177 cases were deleted due to hire dates before 2004. There was no significant effect for the SQ scales predicting job abandonment , χ^2 (3, $n = 7458$) = 2.06, ns. Figures 11 and 12 reveals that around month 6 or 7, the likelihood of job abandonment begins to become less likely. These results reveal that hypothesis 7d was not supported.

<center>Customer Service Performance Model</center>

The eighth hypothesis stated that performance mediates the relationship between employees' personality and customer service. In other words, an individual's personality directly influences their job behavior, which then directly influences customer perception of the organization. This is a mediating relationship, because personality has an indirect influence on customer service through its relationship with performance. Path analysis was used to test this hypothesis.

<center>86</center>

This hypothesis was tested at the store level because customer service information was not available for individuals. The organizational support factor was used as the performance dimension for the current analysis, because it was most related to a customer's perception of a worker's job behavior. This performance factor includes dimensions of guest service, fun, and grooming standards/appearance. Each of these dimensions is salient to the customer and is more likely to be related to customer ratings of the store. Although the personal support and conscientiousness initiative performance factors are certainly related to a customer's perception of the organization, an employee's ability to carry out the organization's expectations to meet customer's needs is directly related to the customer's perception of the restaurant. The drive and energy, sociability, and friendliness scales were included as the personality components of this model. These scales revealed the strongest relationship with the organizational support factor, as indicated by the previous analyses, but also these traits share a theoretical connection with meeting the customer's needs. A sociable, friendly, and energetic employee is most likely to perform the behaviors required to meet the customer's expectations. As described in the procedures section, the mean scores for the SQ scales, performance ratings, and customer service measures were calculated for the month of November 2006 for each store. Any stores that had fewer than 5 employees providing data for the SQ scales and performance factors were removed from the analysis. The resulting sample resulted in 206 individual stores.

All of the variables included in the model revealed a normal distribution, with only one data point at the lower end of the customer service measure compared to the other ratings. This data point was not considered an outlier because it was within the range, and not too discrepant to make a large impact on the model, therefore it was left in. No multivariate outliers were present among the SQ scales, and mulitcollineraity was not an issue due to the low to moderate

correlations between the scales. No missing data was contained in this analysis. Sample size was deemed more than adequate for the sample as there were more than five individuals for each variable (Gorusch, 1983).

LISREL 8.52 (Jöreskog & Sörbom, 2000) was used to perform path analysis on the proposed model. In order to determine model fit, appropriate fit indices, path coefficients, and generalized multiple correlations were reviewed. Maximum likelihood estimation was employed to estimate the model. Multiple fit indices were reviewed to determine fit of the model (Bollen, 1989). The nature of these fit indices were discussed above in reference to the confirmatory factor analysis of the contextual performance factors.

Similar to confirmatory factor analysis, a model is specified in path analysis, parameters for the model are estimated using sample data, and the parameters are used to produce the estimated population covariance matrix. The model was specified by indicating the mediating model between personality and customer service. Estimation methods in confirmatory factor analysis attempt to minimize the difference between the observed and estimated population covariance matrices. Path analysis involves running regression equations between the predictors and criterion variables. This process involves estimating the regression of the dependant variables (criteria) on the independent variables (predictors) and then solving for the structural parameters in terms of the regression coefficients. In this study, the three SQ scales predict organizational support performance, and the organizational support measure predicts the customer service measure (with arrows indicating the path of the relationship). Path analysis produces path coefficients, similar to standardized partial regression coefficients, to indicate the unique influence each predictor has on the criteria. Another statistic computed from these regression equations is the generalized multiple correlation (R^2) which indicates the amount of

variance accounted for in the model by the variables. In the case of a mediating model, this multiple correlation can be computed for each path and compared to the direct path of the personality scale to the customer service measure to indicate an improvement. For this analysis, the observed variables were used in the path model, rather than creating latent variables for each of the constructs. Therefore, the model was evaluated based on the relationship between the observed variables, rather than the relationships between latent variables as in structural equation modeling.

Table 23 provides the means, standard deviations, and original correlations among the variables in this analysis. Figure 13 reveals the customer service performance model with the associated path coefficients. The path from drive and energy to organizational support was the only significant path in the model (path coefficient = .07, p < .05).

As shown in Table 24, the hypothesized model revealed mixed support based on the different fit indices. The model revealed a good fit, χ^2 (3, N = 206) = 7.48, ns, as indicated by a non significant χ^2 test and an acceptable comparative fit index (CFI) = .92 value. The root mean square error of approximation (RMSEA) = .09 revealed a mediocre fit, however, and the non-normed fit index (NNFI) = .72 was below the acceptable value (Hu & Bentler, 1995). The tested model with an indirect path (mediating path) did account for more variance (R^2 = .05) than the direct path (R^2 = .00) of the personality scales to the customer service measure, providing some support for hypothesis 8. Despite these findings, the variance explained in customer service measures in this model is still very small, therefore other factors must influence the customer's overall impression of the organization.

These results provided support for some hypotheses, partial support for others, and surprisingly opposite effects for other hypothesized relationships. The contextual performance

factors indicated a close fit to the data using two sub samples within the larger sample, thus lending support to the hypothesis 1. Although the aligned personality and performance dimensions correlations were slightly higher than the non-aligned correlations, the difference was rather small. This provided only partial support for hypothesis 2. The emotional consistency and friendliness SQ scales revealed significant correlations with overall performance providing partial support for the hypothesis 3. However, the acceptance of authority scale did not correlate significantly with overall performance as expected. The results did not support the hypothesis 5, because no interaction effect was found between acceptance of authority and friendliness. A nonlinear relationship was revealed for sociability and friendliness with overall performance, but not for emotional consistency. The pattern of the curvilinear relationship was opposite as expected for friendliness and sociability. Differential patterns of the correlation between personality scales and performance were found between the two position groups, however the front of house position correlations were consistently greater than back of house correlations, which was the opposite result as expected. Among the turnover hypotheses, drive and energy was a significant predictor of decreasing the rate of turnover as well as ninety day turnover providing partial support for hypotheses 7a and 7b. No support was found for hypotheses 7c and 7d, which posited that certain personality scales would be significantly related to involuntary turnover and job abandonment. Finally the customer service performance model had some fit indices that reflected an acceptable fit to the data while others suggested more improvement could be made. Overall, the model did not explain much variance in the customer service measure, thus lending minimal support for hypothesis 8.

CHAPTER 4

DISCUSSION

The purpose of the current study was to examine the relationship between personality and

job performance at a deeper level, while taking a construct oriented approach. Therefore, the

purpose of the study was not to justify or critique the use of personality variables in the

workplace; rather it was to understand when, where, and how the constructs relate to each other.

This was done through investigating traits and facets of the five factor model (FFM), exploring

different dimensions of job performance, studying the nonlinear relationships between the

variables, and integrating the work context by looking at differences in the relationship between

personality and job performance between types of positions. The following discussion outlines

the results and interpretations of each of the hypotheses, the implications of the study, its

limitations, and recommendations for future research.

The first hypothesis set forth to confirm the three factors of contextual performance

proposed by Borman et al. (2001). These factors include personal support, organizational

support, and conscientious initiative. The nine performance dimensions included in this study

were proposed to fit the three factor structure. A confirmatory factor analysis provided support

for this contextual performance dimensionality. This contextual performance dimensionality was

cross validated on a sub-sample, providing confidence in the generalizability of the three factors.

This finding is exceptional considering that the nine performance dimensions were identified

without the three factor structure of contextual performance as a framework for delineating

between the dimensions of job performance. In many hourly or entry-level jobs, several different

dimensions of performance are not as well defined, making this a unique opportunity to explore

this factor structure for this population. The robust sample size also lends confidence to this model as a framework for characterizing job performance.

The correlations between the three latent factors of contextual performance indicate that a higher order of job performance factor is present. This supports previous research that supported job performance in a hierarchical fashion, where second-order factors are present (Ones et al., 2005). While it is important to note that an overall factor of job performance may be present, the additional analyses performed in the study clearly show that different variables (e.g., personality scales) relate to each contextual performance dimension in a different way. The support for broader factors helps move the scientific investigation of job performance forward by providing a framework from which researchers and practitioners can draw from to share findings and promote a general understanding. However, there also exist several unique performance dimensions within jobs and industries that provide a clearer view of how an individual contributes to work. Current research in the industrial and organizational psychology community have been focused on "competencies", or cluster of behaviors that entail good performance (Shippmann et al., 2000). These narrowly defined competencies may be the equivalent of "facets" in the personality domain. The number of competencies can be infinite due to the variety of jobs and roles, but having a broader framework, such as the contextual performance factors, can help researchers and practitioners to structure the competencies as they relate to each other.

The second hypothesis followed previous research that found personality variables are more valid for theoretically linked performance dimensions (Hogan & Holland, 2004; Bartram, 2005). The personality scales and performance dimensions were determined to be aligned by subject matter experts familiar with the two constructs. The aligned variables revealed slightly higher correlations, however not as great as previous research has found (Bartram, 2005; Hogan

& Holland, 2004). Despite the lack of overwhelming support for this hypothesis, some interesting relationships revealed themselves that lend support to take a theoretical approach to validating personality variables.

The data clearly showed that the two performance dimensions related to the sociability scale were correctly aligned. The fun and guest service performance dimensions were positively related to sociability at a significant level, while every other performance dimension was non-significant and often negatively related. If the performance construct was not broken up into separate dimensions, then one would probably conclude that sociability is unrelated to performance, due to its zero correlation with overall performance. However, it revealed a relatively better relationship with these two performance dimensions which help the organization carry out its overall goals. This finding also points to the fact that some personality variables may be aligned to performance constructs easier than others. The reason behind this may be that certain personality constructs are more salient and understandable as how they relate to performance dimensions. The alignment process between personality constructs and performance should be considered in future studies taking a construct-oriented approach.

Although some personality constructs may be easier to align with performance dimensions, it is also important to have subject matter experts intimately familiar with the job making these judgments. More rigorous rater training, involving a thorough analysis of the job (through observation or interviews), could have enhanced the raters' ability to make better mappings. Rater training needs to be a thorough component of any future studies deciding the personality characteristics required to carry out the critical components of the job.

Based on prior research of the validity of conscientiousness, emotional stability, and agreeableness in predicting performance (Mount et al., 1998; Hurtz & Donovan, 2000) it was

proposed that the associated scales would be valid for contextual performance in the current study. The friendliness and emotional consistency scales, reflecting the agreeableness and emotional stability FFM traits respectively, revealed significant correlations with performance as expected. The effect size of these relationships were similar to meta-analytic reports (Mount et al., 2001), however they were slightly lower than other studies focusing on jobs involving interpersonal interactions (e.g., Mount et al., 1998). However, it was interesting to find that agreeableness emerged as one of the stronger predictors in this interpersonal environment, which reflects previous findings of validation studies focused in this environment (e.g., Hurtz & Donovan, 2000). Surprisingly, the one personality scale that did not correlate significantly with any of the contextual performance factors, acceptance of authority, was expected to reveal the strongest the relationship based on the overwhelming evidence for the validity of consscientiousness and its facets (Barrick & Mount, 1991; Mount et al., 2001). One explanation for this counterintuitive finding may be that conscientiousness and its facets may predict task performance better than contextual performance. Some research reveals that conscientiousness is not predictive of contextual performance (Gellatly & Irving, 2001), while other research shows that conscientiousness can be a valid predictor of task performance (Borman et al., 1991; Hunter, 1983). Although task performance was not measured in this study, future research should evaluate the relative impact FFM traits have on task vs. contextual performance.

In addition to other components of the performance construct that could have enhanced the study's findings, a better scale of measurement of job performance could have increased the effect sizes. The scale in the current study contained only three rating points, although normally distributed; it still limited the variability of performance. A five or seven point scale, if distributed normally, could have increased the variability of the performance distribution and in

turn increased the differentiation of performers that could lead to higher validity coefficients. Inceoglu and Bartram (2006) showed in their study that moving from a three point performance rating scale to a six point rating scale increased the validity of the personality measures. These results support the notion that the validity of personality measures does in fact depend on the quality of the performance measure.

Despite the strong theoretical connection between the personality factors and contextual performance in the current study, the effect sizes of the correlations were slightly lower than expected. One moderating variable that may attenuate these relationships is job autonomy. Research has shown that jobs that are low in job autonomy reveal weaker relationships between individual personality variables and performance (Barrick & Mount, 1993; Gellaltly & Irving, 2001). This follows previous research from broader (non-work related) contexts which reveal that the strength of the situation moderates the relationship between personality and behavior, due to the variable pressures and demands of any situation (Bem & Allen, 1974; Mischel, 1977). Once again, performance relates to behavior under the individual's control, and when someone's behavior is constrained, it can prevent the potential effect of personality variables influencing performance of their job duties. The jobs in the current study reflect hourly, entry-level jobs that must follow several rules and procedures while under the watchful eye of management. Within these hourly positions, it was clear that the personality variables were more valid for the customer facing (front of house) positions which require some flexibility due to the variable nature and demands of the customers. The back of house positions, however, must follow very strict preparation procedures, cooking techniques, and food safety regulations with constant management supervision. By constraining an individual's potential behavior, the strength of the situation prevents personality constructs to predict performance, because the variability is

attenuated. More research should evaluate the moderating effects of job autonomy within job levels (hourly, management, executive), and by industry to gain an even greater perspective of the potential impact personality can play in predicting job performance.

The fourth hypothesis proposed that an interaction would exist between the friendliness and acceptance of authority scales, with the relationship being greater between acceptance of authority and performance for individuals higher in friendliness. This proposition followed previous research where the validity of conscientiousness was greater for workers that were more agreeable (Witt at al., 2002). The interaction was not witnessed in the current study based on the lack of incremental variance explained by the interaction term over the main effect. Part of the reason for this finding was an overall weak relationship between acceptance of authority and performance to begin with. Prior research utilized a full measure of the conscientiousness domain (Witt et al., 2002), while the current study only measured one facet of the conscientiousness domain which may explain the lack of support for finding an interaction. A more robust measure of conscientiousness may have revealed a stronger relationship with performance, thus making it more likely to witness an interaction effect. Other variables, such as emotional consistency, could have revealed the same interactive effect with friendliness, but was not tested in the current study due to the sparse amount of previous research investigating these types of effects. Clearly, more research should investigate these interactive relationships in order to understand how personality constructs integrate with one another to predict performance.

In the fifth hypothesis, a curvilinear relationship was expected between the sociability, friendliness, and emotional consistency scales and performance. Recent research has supported the nonlinear relation between personality variables and performance (LaHuis et al., 2005; Le et al., 2007); therefore some nonlinear relationships were expected to better fit the data in this

96

sample. The sociability and friendliness scales indicated a curvilinear relationship, while the emotional consistency scale did not indicate a nonlinear relationship. An inverted U-shaped curve was expected, where the optimal point of friendliness and sociability fell in the middle of the scale, however, a U-shaped curve fit the data in the sample.

For the sociability scale, the curve trended downward, indicating a negative relationship with performance, with a slight increase at the top of the scale. Therefore, the data suggested that being less sociable increased performance, except for those on the high end of sociability who witnessed a slight increase in performance. The data in the current sample was negatively skewed for sociability, indicating that the type of people entering this job were already more sociable than the average population. With a wider distribution, an inverted U-shape may exist, but those people who are very low in sociability may avoid trying to work in this highly sociable industry. The negative slope in the data suggests that those who are more social than the typical hire are less likely to be productive, but those lower in sociability in the greater population may be less effective than the typical hire.

The friendliness scale presented more of a clear U-shaped curve with the individuals lower in performance falling directly in the middle of the distribution of friendliness. Interestingly, the linear function was a positive, strong slope, indicating a strong positive relationship with performance. Once again, this scale was negatively skewed with more hires scoring at the high end of the scale. Similar to the sociability scale, future work should evaluate scores of individuals in the general population range. Range restriction aside, one may suspect that top performing restaurant workers may be more productive when they are very friendly, or more tough minded, but not ambiguous in their degree of friendliness. Perhaps co-workers and supervisors prefer someone who is straightforward and consistent in their actions, rather than

someone who is friendly sometimes and independent or cold in other circumstances. Although no position based effects were found for this relationship, a closer look at the data may suggest that greater tenured employees who direct and lead their peers may need to be more tough-minded in order to train and develop them.

Previous research has either tested the inverted-U shape or cubic functions, but these findings indicate that more interesting, and complex relationships may exist. This has a tremendous impact in scoring and making hiring recommendations on personality measures used for selection. Researchers and practitioners must be able to identify the optimal point of the personality trait based on robust data, and score the measure appropriately in order to make the right decisions. Placing faith in linear relationships and making top down selection decisions is likely to decrease the utility of these measures, and researchers must catch up with the prevalent use of these instruments to provide sound recommendations.

The sixth hypothesis explored the differences between the correlations of the personality scales and performance by position group. While FFM traits of agreeableness, emotional stability, and extraversion are predictors across several hourly jobs, research has shown that they are especially important for team based positions, and slightly less predictive than customer facing jobs (Goffin, 2006; Mount et al., 1998). Therefore, it was hypothesized that drive and energy, sociability, emotional consistency, and friendliness would reveal higher correlations with performance for the back of house (team-based) jobs than the front of house (customer facing) jobs. In fact, the opposite was found with the current data, with most of the scales revealing greater relationships with performance for front of house jobs. The one exception of this pattern was for drive and energy, which seems to be an important aspect for back of house workers that must exhibit behaviors related to this trait when working under the types of conditions in the

98

kitchen. Another interesting finding was that the drive and energy scale best predicted the personal support factor of contextual performance for back of house positions, while it best predicted the conscientiousness initiative factor for front of house positions. This finding shows that not only does the validity of personality scales differ by position, but also how they relate to aspects of performance within each position. Similar to prior research, the drive and energy facet of extraversion was more predictive of performance than the sociability facet across positions (Hogan & Holland, 2004). This suggests that this FFM trait may be too broad to draw conclusions from as a whole, and the separate facets must be analyzed when assessing its validity with performance.

Another reason for the personality scales better predicting front of house performance than back of house performance is the issue of job autonomy. As discussed earlier, back of house positions differ in their level of flexibility and supervision than front of house positions, which decreases the impact that individual differences can have on performance. Furthermore, a primary function of the front of house position entails interacting with many different customers in which an individual's personality plays a greater role in those interactions for achieving the organizations goals. The backs of house interactions, however, mostly entail the same team members, limiting the range of variability in the interactions for personality to make a strong impact. This customer facing explanation for the greater validity of personality variables in front of house positions is supported by the fact that the friendliness scale revealed the highest correlations with performance for front of house workers, while it revealed the opposite pattern for back of house workers. A primary goal of the front of house worker is to accommodate and appease the customer, while a primary goal of the back of house worker is to quickly prepare and cook food in an appropriate manner. Clearly the friendliness trait will help front of house

workers accommodate a wide variety of customers (especially the unruly ones), while greater friendliness may not help back of house workers get their job done quicker or more accurate.

One could also reason that front of house workers may need a higher level of each of the personality scales included in the current study than back of house workers to perform well. This implies that the optimal level of each personality scale in this study is lower for the back of house workers than it is for front of house workers. Therefore, more nonlinear relationships would exist among the personality scales and performance for the back of house workers because the optimal level of the trait would fall in the middle of the scale. The correlations reported in the current study represent the linear association between personality and performance, which clearly show greater effect sizes for front of house workers. The optimal validity of the personality scales for back of house workers may be greater if scored in a nonlinear fashion.

Within this specific industry and job level, very different patterns of correlations revealed themselves for the two position groups thus supporting the need to take a closer look at how personality variables can impact performance.

The seventh hypothesis evaluated how many different personality variables are related to turnover. Specific hypotheses were made between several personality constructs and different types of turnover. Among the supported predicted relationships, drive and energy was negatively related to turnover (not specified), and turnover within the first ninety days. Working in the fast paced environment of the restaurant industry would possibly be too much for certain employees to handle and either self select out or become terminated because they could not keep up with the pace.

No support was found for the hypothesized personality variables in predicting involuntary turnover or job abandonment. In the case of involuntary turnover, perhaps more

constructs related to integrity and conscientiousness could be assessed in order to predict that type of turnover. For job abandonment, or turnover in general, one's attitudes toward work and career could possibly predict over and above personality variables. In a high turnover industry, many temporary workers occupy these roles with aspirations outside of the restaurant industry. Assessing attitudes toward the satisfaction with the work and potential career in the industry is likely to predict turnover at a greater level than one's personality to perform the job well.

One advantage of the study was the utilization of the survival analysis, where one could identify the rate of turnover across time. Among all types of turnover, the likelihood to leave the organization rises sharply until about one year, and then begins to plateau. In other words, workers that last over a year are just as likely to stay with the organization as those with greater tenure. The one year mark may be a significant mark in this industry that ensures future employment. In addition to this analysis, the survival and hazard function graphs revealed that people in back of house positions were more likely to turnover than people in the front of house positions. Some reasons for this finding may include that back of house workers earn a lower pay rate which could impact their commitment to the job and the organization. Another possible reason could be the lack of advancement opportunity within the company, thus making one less likely to continue with an organization for hope of a promotion. All of these possible reasons suggest that back of house workers are a good target to promote retention strategies given their situation. It is recommended for future research that attitudinal and personality variables be evaluated together in predicting various different types of turnover. Furthermore, the survival analysis procedures were beneficial because it allowed another interesting look at the data to draw further insights.

The eighth and final hypothesis proposed a customer service performance model that related personality variables to contextual performance which then predicted customer service ratings. This hypothesis followed the model proposed by Schmitt et al. (2003) that predicted a similar path between individual difference variables to performance and eventually to outcome variables (such as customer service). This analysis was performed at the unit level, as customer service ratings were collected per restaurant. The results indicated that a unit's average drive and energy score was significantly related to the average organizational support performance score. This provides additional support for evaluating the effect of personality variables on performance at a group level (Barrick et al., 1998). Additional research should investigate the effect of group personality characteristics that can interact with each other to predict group performance. This would assist in team selection, deployment, and development.

A path model was tested that evaluated the mediating effect that performance played between personality and customer service. This model received marginal support, with some fit indices indicating that more improvement could be made to the model. Overall the model explained little variance, but did improve from the direct relationship between the personality variables and customer service, emphasizing the importance of differentiating performance from outcome variables. Ideally, individual level customer service scores could be collected to keep the unit of analysis at the individual level. Additionally, Schmitt's et al. (2001) model included a step between personality variables and performance that involved declarative knowledge, procedural knowledge, and motivation. These variables were not studied in the current study and could have explained additional variance in the path between personality and performance. Future research should explore these more proximal relationships in greater depth.

A limitation of the unit level analysis was that not all individuals within the restaurant were included. One very important category of workers that were not included in this analysis consisted of the store managers. Due to the small amount of variance explained, several environmental factors must be important in predicting customer service, and the managers' impact on that outcome may provide incremental variance. It is not expected, however, that the manager's role will explain the rest of the variability in this path, because many of the ratings given by customers are subject to error variance and factors outside of the resident employees' or manager's control. Also, customer service ratings targeted towards certain position groups (e.g., temperature of food, server friendliness) should be explored in greater detail in order to gain some perspective on the direct relationship between individual personality and individual customer service.

In order to garner more support for the use of personality variables, one must build the connection between performance (defined at the behavioral level) and relevant outcomes that drive the business. Key decisions makers and practitioners will be more likely to accept the utility of personality (or selection) instruments if they relate to valuable business outcomes. Industrial and organizational psychologists should produce better research and provide education in how these paths are connected, and the expected strength of these paths in the light of situational factors outside of the individual's control.

<center>Implications</center>

The results of this study provide some insight into two widely studied constructs in industrial and organizational psychology. This study contributes to the understanding of the nature of job performance, its relationships with personality factors, and how these constructs reveal differential relationships depending on the nature of the situation.

<center>103</center>

The dimensionality of contextual performance was tested in this study, and the data confirmed the existence of the three factor model proposed by Borman et al. (2001). The three factors consisted of personal support, organizational support, and conscientious initiative. This finding is especially important, considering the size of the data set, and that the performance ratings were not originally collected for research purposes. Due to the nature of the data collected, the sub-dimensions of the model were not tested, and future research should evaluate those sub-dimensions. The research done by many industrial and organizational psychologists, especially in the area of personnel selection, often focus on the predictor side of the validity equation without understanding the nature of performance. This contextual performance model, which fits within a larger hierarchical performance model, can help researchers better understand and study the relationships between predictors and the criterion. The research also revealed how the three factors of contextual performance have different relationships with personality factors. Thus when studying the effectiveness of a personality trait, using overall job performance as a criterion measure will be inadequate to understand the true utility of the personality variable.

From a practical perspective, job performance is an important component of work that employees and their supervisors deal with everyday. Work related activities such as performance evaluations, training initiatives, and daily rewards for performing certain job behaviors can be better understood within this framework. For instance, efforts to create a culture that promotes workers going above and beyond their normal job assignments can focus on these different types of contextual performance factors, rather than trying to change all contextual performance at once. This broad contextual performance framework can serve as a platform to build targeted training and development initiatives or performance management systems to make these initiatives manageable.

With regard to performance management, many organizations are now using competency models to define performance expectations for its employees (Shipmann et al., 2000). On many occasions these competency models may contain an unwieldy amount of competencies, making it difficult for supervisors to focus on training and coaching their direct reports. In addition, it can be overwhelming for the employees to keep up with all of their expectations. This hierarchical model of job performance can provide some structure and parsimony around these competencies to keep them manageable for employees and supervisors alike.

Another implication of this study is the support found for evaluating several different moderating variables in the personality and performance relationship. One of the main reasons for this study was to investigate these relationships at a deeper level with theory guiding the a prioi hypotheses. While meta-analyses have provided researchers a greater understanding of these relationships by collecting several different smaller studies, this study was able to test several different hypotheses within a single sample, and draw some conclusions with some confidence given the size of sample.

One of the conclusions in the current study included that the validity of certain personality factors differed by positions. The front of house position group revealed stronger relationships with personality and performance than the back of house groups for almost all of the personality factors. This finding was counter to previous studies (e.g., Mount et al, 1998) that found certain personality variables were more predictive for team-based jobs than customer facing jobs. In other studies, such as Mount et al.'s (1998) meta-analysis, the teams were in tact on average for five to six years. Clearly, given the high turnover in this industry, the teams evaluated in the current study were not working together as long as the other studies. Rather, team members changed often, which may attenuate the relationship between the personality

105

factors and performance. Without consistent interaction with common team members, the impact of one's personality influences individual performance over that of helping the team and promoting a positive team environment. This finding also gave support for investigating the utility of personality factors within position type. Many studies and meta-analyses may just focus on entry-level workers or managers, but fail to differentiate within the position group. These findings suggest that this is a necessary component for understanding this relationship.

This study also investigated some facets of the FFM, and revealed that facets of the same FFM trait have different relationships with performance. For instance, the drive and energy component of extraversion revealed greater validity for performance than the sociability facet. This replicates other research (Hogan & Holland, 2004) that emphasizes the validity of the ambition or drive facets of extraversion over the sociability facet. This distinction provides practitioners with some guidance for using particular facets of FFM traits that reveal a greater validity for performance. However, this is not to discount the usefulness of the sociability facet because it had the greatest relationship with certain performance dimensions compared to other personality scales, such as the guest service performance dimension.

The validity for the sociability facet highlights another important implication of the study, which is the construct-oriented approach to aligning personality factors and performance factors. Although the difference between aligned and non-aligned relationships were not as large as previous studies (e.g., Bartram, 2005), the patterns of the correlations clearly differed between the personality scales and performance dimensions. Therefore, if practitioners want to learn how to improve performance through personality scales, they should first determine what aspect of performance is desired (e.g., task or contextual performance), and then which facet of personality drives that performance dimensions in order to make a sound decision. To further refine the

106

approach, one can also investigate how performance is impacted by personality at the position level. For instance, this research showed that drive and energy was positively associated with back of house workers' personal support performance, while it was positively related to front of house workers' conscientiousness initiative. Therefore, not only are personality traits (and facets) differentially related to various aspects of performance, but also one's personality contributes to different aspects of performance depending on the nature of the job.

Some methodological and analytical implications of this research include studying the nonlinear relationships between personality and performance and using survival analysis for analyzing relationships with turnover. Although some practitioners may interpret personality variables in a nonlinear fashion when considering a candidate's potential to perform well on the job, research has been slow to keep up with this type of analysis. The results from this study show that friendliness and sociability were related to performance in a nonlinear fashion, replicating other recent research showing significant effects for nonlinear relationships (LaHuis et al., 2005; Le et al., 2007). By studying nonlinear relationships, researchers can provide practitioners better guidance on how to utilize personnel selection instruments. Most of these instruments assume linear relationships, and selection recommendations are made in a top-down fashion. Although some practitioners interpret personality variables in a nonlinear manner, they may be unsure of the exact optimal point of the trait. These assumptions could be misguided and lead to the same problems that practitioners face when making linear assumptions. This study had the advantage of utilizing enough data to be confident about the nonlinear relationships, and future research must consider any spurious results when smaller data sets are used.

Survival analysis procedures were performed for the turnover hypotheses in this study, allowing one to view the rate of turnover across time in relation to different personality variables.

This provided further clarity on how the personality variables impacted long term retention of employees. In a high turnover industry, such as the restaurant industry, the length of time for employees to stay with organization is critical to performance considering that longer tenured employee are often better able to use the systems and procedures. In addition, front of house workers with longer tenure meet and serve returning customers, thus building a more loyal customer base. Knowing what types of variables relate to the turnover event is important, but turnover before ninety days is very different than turnover at three years in this industry. Understanding the rate of turnover and when those events are likely to happen help provide a better understanding to both researchers and practitioners. Survival analysis techniques should continue to be used to investigate these relationships.

This study utilized the performance model proposed by Schmitt et al (2003) as a guiding framework to hypothesize the relationships between the variables included in the study. Many studies conducted on personnel selection fail to capture the theoretical reason for how the variables are related. Using a guiding model helps to understand what variables should be related to each other, the expected strength of these relationships, and how they relate to each other in light of other situational variables. This study was an attempt to test particular parts of this performance model by evaluating the influence of personality variables on contextual performance, and outcome variables such as turnover and customer service. The path model tested in the study suggested that performance did mediate the relationship between personality and customer service at the store level. In addition, some personality factors (drive and energy, emotional stability, and friendliness) were related to contextual performance as hypothesized in the model. Future research should explore other parts of the model, but this study provided a first step towards testing components of the model.

108

Limitations

As with any study, several limitations must be mentioned in light of the findings. One of the main limitations was that the data was collected from one particular industry at one particular job level in two work environments. Considering that differential relationships were found within the position, it is likely that these relationships may be different for other industries and job levels (e.g., management level). This limits the generalizability of the findings.

The skewed personality data suggests that this industry attracts applicants that already have relatively high amounts of the traits measured in the study. This causes some range restriction, and prevents one from evaluating how people with low amounts of the trait would potentially perform on the job. Another reason for the range restriction may be due to the fact that applicants were already screened with a first interview before taking the personality measure. Therefore, individuals with lower sociability or friendliness, for instance, may have already been screened out by the hiring manager through the initial interview process. The range was further restricted when analyzing data using employees with job performance data. When evaluating the relationship between personality and performance, it was important to have employees with long enough tenure for the supervisors to make accurate ratings, but it still limits the range of performers because some poor performers may have not made it that far in their employment. A predictive validation study that did not use the personality measure (or an interview process correlated with the personality measure) for selection purposes could have generated greater variability. However, it was not practical for the organization to conduct that type of study.

The range restriction witnessed in this study decreased the variability of each scale, thus possibly limiting the reliability of the personality scales. Because increased reliability for any

measure is associated with increased validity with another variable, the validity was attenuated due to the restriction of variability in the sample. Internal consistency estimates of reliability could not be conducted on the scales for this sample due to the lack of availability of item level data, so reliability estimates from the test manual were employed. The reliability estimates in the test manual could have been higher than those estimates for the restricted sample in the current study, which could impact the level of attenuation corrected for when reporting the results.

Although this study was just testing parts of the performance model by Schmitt et al. (2001), several variables were not included that could provide a better understanding of the relationships included. For the predictor side, many facets of conscientiousness and the trait of openness to experience were not measured. Although the openness to experience measure has not shown high predictive validities (Mount et al., 2001) it would have been useful to compare all of the FFM and its facets in relation to each other. No general mental ability or specific ability measures were included as well. They would have been hypothesized to relate to task performance, another variable not included, however their relationship with the different personality factors would have been important to evaluate. The intervening variables proposed in the performance model (Schmitt et al., 2003) were not included, thus the mediating effect of those variables was not considered when examining the personality and performance relationship. Procedural knowledge and motivation variables could have been used to explain more variance in the relationship between personality and contextual performance, and provide support for the model as a whole.

The eighth hypothesis concerning the mediating effect of performance between personality and customer service at the store level must be interpreted in light of some limitations. The personality measures of every person working in the store (including managers)

were not collected. The employees of which data was collected had to serve as an estimate of the personality variables of the entire population of the store. This same limitation was true for the performance variable as well, as not every employee was rated on performance. However, given the high turnover for this industry it may have been difficult and inaccurate to evaluate every employee's performance with such short tenure. Sample size guidelines were followed to limit this effect; however, a full measure of everyone in the store on every variable would have been a better estimate of the true relationship.

Finally, no situational variables were measured (other than position type) which could provide more explanation of variance for the relationship between personality and performance. The personality and performance of the manager in each of the stores could have clearly provided more information about the utility of personality. As discussed previously, jobs with low autonomy are less susceptible to the influence of individual differences; therefore measuring the level of autonomy of the employees would have been useful for this study. Due to the relatively low amount of variance explained in the current study between personality and performance, more situational variables need to be measured to understand the relative impact of each of theses variables in predicting performance and outcome variables.

Future Research

Even though Barrick and Mount's (1991) meta-analysis was performed on the relationship between personality and job performance over fifteen years ago, research still needs to be done to better understand these relationships. The first step would be to build off of Schmitt et al.'s (2003) comprehensive model of relating individual difference variables to job performance and outcomes. Among the connections lacking in research in this model, include the mediating variables of declarative knowledge, procedural knowledge, and motivation.

Although some studies have attempted to measure these intervening variables (e.g., Schmitt et al., 1996; Motowidlo et al., 1998), more work needs to be done to test the strength of their mediating effect. From a practitioner standpoint, it is still assumed by some that no mediating factors exist between personality and performance. Another missing link in the research on this model exists between performance and outcomes variables. Despite many propositions in research to define performance as a behavior (Campbell, 1990; Motowidlo, 1993) and not an outcome, researchers and practitioners treat the criterion as an all encompassing construct that includes anything from store sales to ratings on job specific competencies. Research must inform practitioners not only on the differentiation between performance and outcomes, but also build the argument that they are linked. Research can build support for this argument by testing the paths proposed in Schimtt et al.'s (2003) model. Among some of the important paths that can be studied are the links between personality factors and turnover. Despite the claim that personality instruments can decrease turnover, little research has been done on the topic, and most research consists of attitudes of employees after hire (Griffeth et al., 2000). Another strategic path is the link between performance and customer service. Many practitioners want to see the link between an investment, such as a selection instrument, to the bottom line of the business. Testing the link between individual differences to performance and outcomes, such as customer service and productivity, creates that strategic argument for the utility of these instruments. Without first explaining the mediating paths, weak connections will be realized between these distal factors, and the strategic impact will be lost.

Some research has already linked different personality constructs to different performance dimensions (Hough & Furnham, 2003); however more work needs to be done to collect studies and tie them to the hierarchical model of job performance used in this study. This

hierarchical model consists of task performance, counterproductive work behavior (CWB), and contextual performance. Task performance and CWB are critical components to one's job, and future research should investigate the relationship between the personality variables in this study and the additional performance factors. For instance, greater support may have been found for the usefulness of the acceptance of authority scale if CWB was included. In addition, the relationship between task performance, contextual performance, and CWB could be investigated. One approach would be to identify the relative importance of each type of job performance factor in the organization's ability to reach its goals. Therefore, one would have a better idea of what to target in the selection process, through training and development, and through a rewards system that promotes the critical areas of one's behavior at work. Tying the performance dimensions to critical outcomes would help provide the organization with a clearer picture of how an individual's behavior relates to important business outcomes, while also providing employees with a better understanding of how they can utilize their talents to meet the needs of the business and its customers.

The current study investigated interactions between personality variables, nonlinear relationships, and moderators in the personality and performance relationship. Only certain variables were tested, and additional research needs to investigate more personality variables using these different methods. Only a few studies have investigated the interactions between personality variables (e.g., Witt et al., 2002), and there are possibilities that interactions exist between additional FFM traits and facets. Furthermore, these interactions may only exist for certain positions or work contexts, and not for others.

The potential to study nonlinear relationships is promising and can be very important for the advancement of utilizing personnel selection measures to their full potential. Many selection

113

decisions are made using a top down approach, and assuming a linear relationship can lead to one to make wrong decisions. As mentioned before, it is important that a robust dataset is used to identify curvilinear relationships in order to avoid capitalizing on chance of a sample. Also, theory should guide testing these assumptions. Many times, curvilinear relationships are very logical and apparent, such as agreeableness in management populations, but others may not be readily apparent. Researchers should provide best practices to practitioners when interpreting personality assessments in a nonlinear fashion.

The main moderating variables tested in the current study included position type and theoretically linked constructs. It was apparent that these variables made a difference in the strength of the relationship between variables, therefore moderating variables should continue to be studied when evaluating personality and performance constructs. Some potential moderating variables that could be studied include work experience, job autonomy, relationships with co-workers, relationship with managers, and mental ability variables. Another potential variable that could be studied is age as it relates to generational differences in the workforce today. An emerging topic in society entails the differences and conflicts between Generation Y and the baby boomers in the workforce (Giancola, 2006; Hira, 2007). Some personality variables may be more predictive for Gen Y workers (e.g., conscientiousness, openness to experience), while others may be more predictive for older generations (e.g., agreeableness). Perhaps differences do not exist, and this would at least prevent faulty assumptions from being made, which can diffuse stereotypes between the generations in the workforce.

New research has emerged studying implicit measures of personality (Bornstein, 2002; Fazio & Olson, 2003; James, 1998; Winter, John, Stewart, Klohnen, & Duncan, 1998). These types of measures do not rely on self-report or explicit methods to assess one's personality.

Rather, several different techniques exist to collect one's implicit, or unconscious tendencies regarding some value laden personality trait and social attitude. Evidence suggests that these implicit measures are only moderately correlated with self-report measures hinting that they measure a different part of the personality construct. More work needs to be done to uncover what these types of instruments are actually measuring (construct validity), and then future work can evaluate the criterion related validity of the instruments in a work setting. Some initial evidence has shown support for their usefulness in predicting behavior (Bing, Stewart, Davison, Green, McIntyre, & James, 2007; Motowidlo, Hooper, & Jackson, 2006), and research can provide recommendations of how they can be combined with explicit (self-report) measures of personality to predict different kinds of work behaviors.

Finally, all future research done on this topic should take a construct-oriented approach when studying personality and performance variables. Researchers should not continue to make the mistake of throwing as many personality variables against a faulty criterion to evaluate the utility of personality. A criterion-centric approach (Bartram, 2005) that focuses on the appropriateness of the criterion while also theoretically linking the variables (Hogan & Holland, 2004) should be the standard when investigating this topic. The results of these studies are only as good as the methodology and the theory driving the analyses.

Furthermore, one should investigate how individuals make the assumption that certain personality variables will relate to performance dimensions, as this is an inferential leap often used by industrial and organizational psychologists that is not often supported by robust research. Many significant decisions are made by practitioners for developing selection components that involve this alignment process, and research should provide best practices in helping them choose personality measures that relate to specific performance dimensions.

Although plenty of results exist for these variables in numerous studies, well guided research needs to be performed to understand the true utility of personality in the workplace.

Table 1

Campbell's Multifactor Model of Job Performance

Dimension	Description
1. Job-specific task proficiency	How well someone performs the core substantive or technical tasks that are central to the job
2. Non-job-specific task proficiency	How well individuals can perform tasks that are not specific to their particular job
3. Written and oral communications	How proficient one can write, speak, independent of the correctness of the subject matter
4. Demonstrating effort	How much someone commits to job tasks and how persistently and intensely someone works at job tasks
5. Maintaining personal discipline	How much someone avoids negative behavior such as alcohol abuse, rule breaking, and absenteeism
6. Facilitating team and peer performance	How well someone supports, helps, and develops peers and helps the group function as an effective unit
7. Supervision	How well someone influences subordinates through face-to-face interaction
8. Management and administration	How well someone performs other, non-supervisory functions of management such as setting organizational goals, organizing people and resources, monitoring progress, controlling expenses, and finding additional resources.

Table 2

Hunt's Hourly Model of Generic Work Behavior

Dimension	Description
1. Adherence to confrontational rules	Willingness to follow rules that might result in a confrontation between the employee and a customer
2. Industriousness	Constant effort and focus towards work while on the job
3. Thoroughness	Quality and cleanliness of work
4. Schedule flexibility	Willingness to change schedules to accommodate demands at work
5. Attendance	Employee absenteeism and punctuality
6. Off-task behavior	Effort expended towards non job-related tasks while at work
7. Unruliness	Minor deviant tendencies and abrasive and inflammatory attitudes towards co-workers, supervisors, and work itself
8. Theft	Taking money or merchandise form the organization and helping friends steal
9. Drug Misuse	Inappropriate use of drugs and alcohol

Table 3

Taxonomy of Citizenship Performance

Dimension	Description
A. Personal Support	Helping others by offering suggestions, teaching them useful knowledge or skills, directly performing some of their tasks, and providing emotional support for their personal problems. Cooperating with others by accepting suggestions, informing them of events they should know about, and putting team objectives ahead of personal interests. Showing consideration, courtesy, and tact in relations with others as well as motivating and showing confidence in them.
B. Organizational Support	Favorably representing the organization by defending and promoting it, as well as expressing satisfaction and showing loyalty by staying with the organization despite temporary hardships. Supporting the organization's mission and objectives, complying with organizational rules and procedures, and suggesting improvements.
C. Conscientiousness Initiative	Persisting with extra effort despite difficult conditions. Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties and finding additional productive work to perform when one's duties are completed. Developing knowledge and skills by taking advantage of opportunities within the organization and outside the organization through the use of one's own time and resources.

Table 4

Second Order Meta-analytic Results for Criterion-related Validities of FFM Constructs

Personality Construct	MAs	K	N	Obs r^{sw}	ρ^{sw}	ρ^{FFM}
Extraversion	8	559	82,032	.08	.12	.15
Emotional Stability	8	453	73.047	.09	.14	.15
Agreeableness	8	308	52.633	.06	.09	.11
Conscientiousness	8	442	79,578	.12	.20	.24
Openness to Experience	7	218	38,786	.03	.05	.07

Note: Criteria includes supervisory ratings of performance, objective performance, training performance, and teamwork. ^{sw} Sample Weighted Estimates. ρ^{sw} = estimated sample weighted true correlation at the scale level; ρ FFM = estimated true correlation at the construct level. MAs = number of meta-analyses included in the analysis; K and N = number of studies and subjects reported across meta-analyses, respectively.

Table 5

Great Eight Competecies and FFM Relationships

Dimension	Hypothesized FFM relationship
1. Leading and Deciding	Extraversion
2. Supporting and Cooperating	Agreeableness
3. Interacting and Presenting	Extraversion
4. Analyzing and Interpreting	Openness to Experience
5. Creating and Conceptualizing	Openness to Experience
6. Organizing and Executing	Conscientiousness
7. Adapting and Coping	Emotional Stability
8. Enterprising and Performing	Agreeableness (inversely related)

Table 6

Stakeholders in Service Performance

Stakeholder Perspective	Components of Valued Performance
Customer	Reliability
	Responsiveness
	Assurance
	Empathy
Supervisor	Administrative task performance
	Customer-oriented task performance
	Job knowledge
	Organizational citizenship behaviors
	Attendance behaviors
Organization	Safety, security, and code of conduct
	Health and welfare
	Tenure and turnover
	Culture and climate
	Workforce flexibility
	Organization-level citizenship
	Organization service strategies
Service Provider	Job/career progression
	Self-management
	Job Satisfaction
	Organizational commitment

Table 7

Meta-analytic Results for Criterion-related Validities of Customer Service Scales

Criterion	Measurement Method	N	K	Mean r	Mean ρ
Customer Service	Ratings	4,401	15	.23	.34
Rehirability*	Ratings	4,002	13	.16	.16
Quantity of Production	Org. records	442	5	.28	.41
CWB	Org. records & Other ratings	740	5	.30	.42
Overall Job Performance	Supervisory Ratings	6,944	33	.27	.39

Note: N = total sample size; K = Number of validities; Mean r = Sample size weighted mean observed validity; Mean ρ = Operational validity, validity corrected for unreliability in the criterion. * No corrections were made for unreliability in the criterion due to unavailability of data.

Table 8

Fit Statistics for Contextual Performance Factors

Proposed Model	Sample	χ^2	*df*	RMSEA	NNFI	CFI	SRMR
1	1 (*n* =1398)	150.89	24	.063	.969	.979	.0328
2	1 (*n* =1398)	131.07	24	.057	.974	.983	.0307
1	2 (*n* =1377)	152.51	24	.062	.966	.978	.0315

Note. RMSEA = root mean square error of approximation; NNFI = non-normed fit index; CFI = comparative fit index; SRMR = standardized RMR. Model 1 proposes the following three factors with associated dimensions in parentheses: personal support (team player, cooperation); organizational support (grooming standards, guest service, fun); conscientiousness initiative (reliability, ability, initiative, stamina). Model 2 proposes mapping the fun dimension on the personal support factor as opposed to the organizational support factor.

Table 9

Descriptive Statistics and Correlations for Contextual Performance Factors

Performance Factor	*M*	*SD*	1	2	3
1. Personal Support	0.00	0.98	-	.54**	.59**
2. Organizational Support	-0.08	1.30	-	-	.60**
3. Conscientious Initiative	-0.44	1.77	-	-	-

Note: *N* = 2775.
**p < .01

Table 10

Descriptive Statistics for SQ scales and Performance Dimensions

SQ Scale	*M*	*SD*	range
Drive and Energy	23.31	3.41	0 to 30
Sociability	26.65	2.99	0 to 30
Emotional Consistency	25.05	3.06	0 to 30
Friendliness	22.20	4.56	0 to 30
Acceptance of Authority	22.97	3.91	0 to 30
Performance Dimension			
Grooming Standards	-0.01	0.62	-1 to 1
Reliability	-0.08	0.70	-1 to 1
Fun	-0.04	0.57	-1 to 1
Ability	-0.06	0.61	-1 to 1
Guest Service	-0.02	0.60	-1 to 1
Team Player	0.00	0.61	-1 to 1
Initiative	-0.26	0.62	-1 to 1
Stamina	-0.05	0.52	-1 to 1
Cooperation	0.00	0.55	-1 to 1

Note: *N* = 2775. Sample only contains employees that have performance review information.

Table 11

Intercorrelations Between SQ Scales

SQ Scale	1	2	3	4	5
1. Drive and Energy	-	.31**	.13**	.02	-.08**
2. Sociability	-	-	.32**	.21**	.08**
3. Emotional Consistency	-	-	-	.43**	.16**
4. Friendliness	-	-	-	-	.31**
5. Acceptance of Authority	-	-	-	-	-

Note: *N* = 2775. Sample only contains employees that have performance review information
**p* < .01

Table 12

Correlations Between SQ Scales and Performance Dimensions

Performance Dimension	SQ Scales				
	G	*S*	*E*	*F*	*A*
Grooming Standards	-.01	-.01	.02	.05*	**.00**
Reliability	.01	-.03	.02	.05*	**.01**
Fun	.02	**.06****	**.01**	**.01**	-.01
Ability	**.07****	.02	.04	.07**	**-.02**
Guest Service	.05*	**.06****	.02	**.03**	-.03
Team Player	.05**	-.02	.01	**.02**	-.01
Initiative	**.04***	-.04	.04	.02	.00
Stamina	**.04***	-.04	**.03**	.03	.00
Cooperation	.03	.01	.05**	.04*	**-.03**

Note: *N* = 2775. *G* = Drive and Energy; *S* = Sociability; *E* = Emotional Consistency; *F* = Friendliness; *A* = Acceptance of Authority. Aligned relationships, as indicated by subject matter experts, are in bold.
**p* < .05 ***p* < .01

Table 13

Correlations Among SQ Scales and Contextual Performance Factors

Scale	1	2	3	4	5	6	7
All Positions (*N*=2775)							
SQ Scales							
1. Acceptance of Authority	-	.20**	.36**	-.02	-.02	.00	-.01
2. Emotional Consistency	-	-	.42**	.03	.02	.04*	.04*
3. Friendliness	-	-	-	.03	.04	.06**	.06**
Contextual Performance							
4. Personal Support	-	-	-	-	.54**	.59**	.79**
5. Organizational Support	-	-	-	-	-	.60**	.83**
6. Conscientious Initiative	-	-	-	-	-	-	.90**
7. Overall Performance	-	-	-	-	-	-	-
FOH Positions (*n*=2129)							
SQ Scales							
1. Acceptance of Authority	-	.16**	.32**	.00	-.02	.01	.00
2. Emotional Consistency	-	-	.42**	.04	.02	.06**	.05*
3. Friendliness	-	-	-	.07**	.05*	.10**	.09**
Contextual Performance							
4. Personal Support	-	-	-	-	.55**	.59**	.79**
5. Organizational Support	-	-	-	-	-	.63**	.85**
6. Conscientious Initiative	-	-	-	-	-	-	.91**
7. Overall Performance	-	-	-	-	-	-	-
BOH Positions (*n*=641)							
SQ Scales							
1. Acceptance of Authority	-	.13**	.28**	-.08	-.03	-.02	-.05
2. Emotional Consistency	-	-	.44**	.01	-.01	-.01	-.01
3. Friendliness	-	-	-	-.06	-.04	-.01	-.04
Contextual Performance							
4. Personal Support	-	-	-	-	.53**	.61**	.81**
5. Organizational Support	-	-	-	-	-	.54**	.79**
6. Conscientious Initiative	-	-	-	-	-	-	.91**
7. Overall Performance	-	-	-	-	-	-	-

Note: Overall Performance is sum of 3 contextual performance factors. FOH = front of house; BOH = back of house
p < .05   **p* < .01

Table 14

Correlations Between SQ Scales and Contextual Performance Factors Corrected for Attenuation

	SQ Scales				
Performance Dimension	*G*	*S*	*E*	*F*	*A*
Personal Support	.08**	.00	.04	.05	-.03
	(.05)	(.00)	(.03)	(.03)	(-.02)
Organizational Support	.05	.08*	.03	.06*	-.03
	(.03)	(.05)	(.02)	(.04)	(-.02)
Conscientious Initiative	.09**	-.05	.06*	.09**	.00
	(.06)	(-.03)	(.04)	(.06)	(.00)
Overall Performance	.08**	.00	.06*	.09**	-.02
	(.05)	(.00)	(.04)	(.06)	(-.01)

Note: $N = 2775$. *G* = Drive and Energy; *S* = Sociability; *E* = Emotional Consistency; *F* = Friendliness; *A* = Acceptance of Authority. Correlations in parentheses are observed and uncorrected for predictor and criterion unreliability.
*$p < .05$ **$p < .01$

Table 15

Moderated Regression Results

Step	*R*	R^2	ΔR^2	β
Step 1. Acceptance of Authority	.066**	.004	.004**	-.03
Friendliness				.07**
Step 2. Cross-Product	.066**	.004	.000	-.01

Note: $N = 2775$. Cross-Product represents interaction term of Acceptance of Authority and Friendliness.
**$p < .01$.

Table 16

Polynomial Regression Results

Step	R	R^2	ΔR^2	β
Step 1. Sociability	.001	.000	.000	.00
Step 2. Sociability	.044	.002	.002*	-.39*
Quadratic Term				.39*
Step 1. Friendliness	.057**	.003	.003**	.06**
Step 2. Friendliness	.068**	.005	.001*	-.19
Quadratic Term				.25*
Step 1. Emotional Consistency	.038*	.001	.001*	.04*
Step 2. Emotional Consistency	.039*	.002	.000	-.03
Quadratic Term				.07

Note: N =2775.
*p < .05 **p < .01

Table 17

Position Based Correlations Among SQ Scales and Contextual Performance Factors

	SQ Scales			
Performance Factors	G	S	E	F
FOH Positions (*n*=2129)				
Personal Support	.04	.00	.04	.07**
Organizational Support	.03	.03	.02	.05*
Conscientious Initiative	.07**	-.02	.06**	.10**
Overall Performance	.06*	.00	.05*	.09**
Ranked Performance[a]	.06**	-.03	.07**	.09**
BOH Positions (*n*=641)				
Personal Support	.09*	.00	.01	-.06
Organizational Support	.00	-.07	.00	-.04
Conscientious Initiative	.04	-.02	.00	-.01
Overall Performance	.04	-.03	.00	-.04
Ranked Performance[a]	.07	.01	.00	-.01

Note: Overall Performance is sum of 3 contextual performance factors. Ranked Performance reflects forced ranking distribution based on overall performance scores at each store. FOH = front of house; BOH = back of house. *G* = Drive and Energy; *S* = Sociability; *E* = Emotional Consistency; *F* = Friendliness; *A* = Acceptance of Authority. *p* < .05 **p* < .01
[a] *N* = 2120 and 635 for correlations with Ranked Performance for FOH and BOH, respectively.

Table 18

Cox Regression Results for Turnover

Predictors	*B*	*SE*	Wald	OR
Drive and Energy	-.015	.005	10.92**	0.985
Emotional Consistency	.009	.005	2.54	1.009
Acceptance of Authority	.006	.004	1.74	1.006
χ^2		15.34**		
R^2		.00		

Note: $N = 9610$. OR = Odds Ratios; Positive regression coefficients represent increased likelihood of turnover with increase in predictor. Negative regression coefficients represent a decreased likelihood of turnover with increase in predictor.
**$p < .01$.

Table 19

Cox Regression Results for Turnover with Position as a Predictor

Predictors	*B*	*SE*	Wald	OR
Drive and Energy	-.003	.005	0.53	0.997
Emotional Consistency	.018	.005	11.43**	1.019
Acceptance of Authority	.003	.005	0.04	1.003
Position	-.330	.034	92.44**	0.719
χ^2		99.30**		
R^2		.01		

Note: $N = 8933$. Position codes: 1 = front of house; 0 = back of house; OR = Odds Ratios; Positive regression coefficients represent increased likelihood of turnover with increase in predictor. Negative regression coefficients represent a decreased likelihood of turnover with increase in predictor.
**$p < .01$.

Table 20

Cox Regression Results for Ninety Day Turnover

Predictors	B	SE	Wald	OR
Drive and Energy	-.017	.004	13.90**	0.983
Emotional Consistency	.003	.005	0.35	1.003
Acceptance of Authority	.013	.004	8.66**	1.013
χ^2		24.99**		
R^2		.00		

Note: $N = 9610$. OR = Odds Ratios; Positive regression coefficients represent increased likelihood of turnover with increase in predictor. Negative regression coefficients represent a decreased likelihood of turnover with increase in predictor.
**$p < .01$.

Table 21

Cox Regression Results for Involuntary Turnover

Predictors	B	SE	Wald	OR
Acceptance of Authority	.013	.017	0.59	1.013
χ^2		0.59		
R^2		.00		

Note: $n = 5558$. OR = Odds Ratios; Positive regression coefficients represent increased likelihood of job abandonment with increase in predictor. Negative regression coefficients represent a decreased likelihood of job abandonment with increase in predictor.
**$p < .01$.

Table 22

Cox Regression Results for Job Abandonment

Predictors	*B*	*SE*	Wald	OR
Drive and Energy	-.006	.006	0.75	0.994
Emotional Consistency	.002	.008	0.05	1.002
Acceptance of Authority	.006	.006	1.07	1.006
χ^2		2.06		
R^2		.00		

Note: *N*n= 7458. OR = Odds Ratios; Positive regression coefficients represent increased likelihood of job abandonment with increase in predictor. Negative regression coefficients represent a decreased likelihood of job abandonment with increase in predictor.
**$p < .01$.

Table 23

Descriptive Statistics and Correlations among store level varaibles

Variable	*M*	*SD*	1	2	3	4	5
1. Drive and Energy	23.30	1.28	-	.31**	.12	.18**	.07
2. Sociability	26.58	1.11	-	-	.35**	.16**	-.12
3. Friendliness	22.19	1.68	-	-	-	.05	.05
4. Organizational Support	-0.02	0.59	-	-	-	-	.02
5. Customer Service	0.49	0.09	-	-	-	-	-

Note: *N* = 206
**$p < .01$

Table 24

Fit Statistics for customer service performance model

N	χ^2	*df*	RMSEA	NNFI	CFI	SRMR	R^2
206	7.48	3	.085	.73	.92	.038	.05

Note. RMSEA = root mean square error of approximation; NNFI = non-normed fit index; CFI = comparative fit index; SRMR = standardized RMR; R^2 = proportion of variance in customer service scores accounted for by the model.
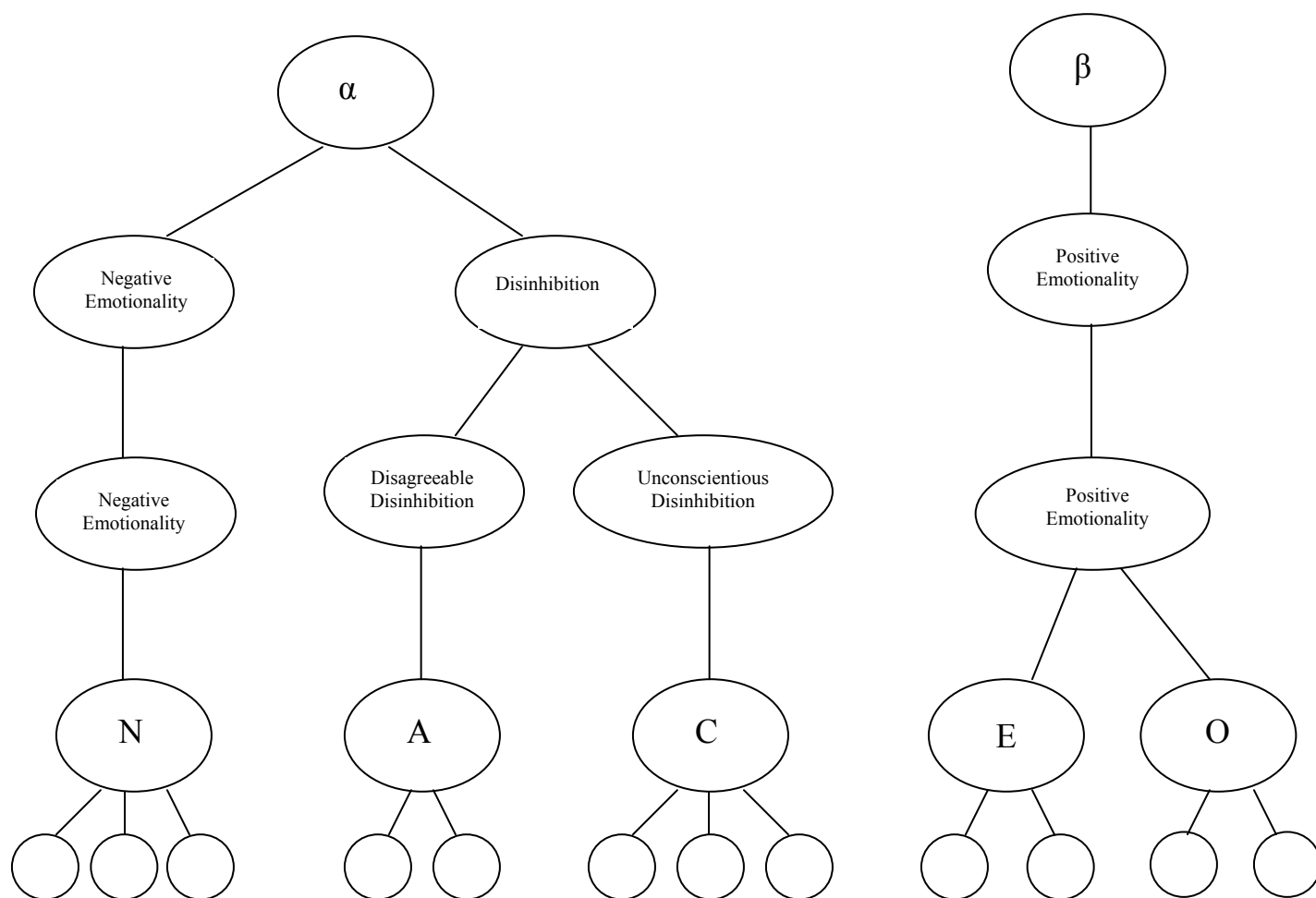
Figure 1. Hierarchical structure of personality.

Note: N = Neuroticism (Emotional Stability); A = Agreeableness; C = Conscientiousness; E = Extraversion; O = Openness to Experience.

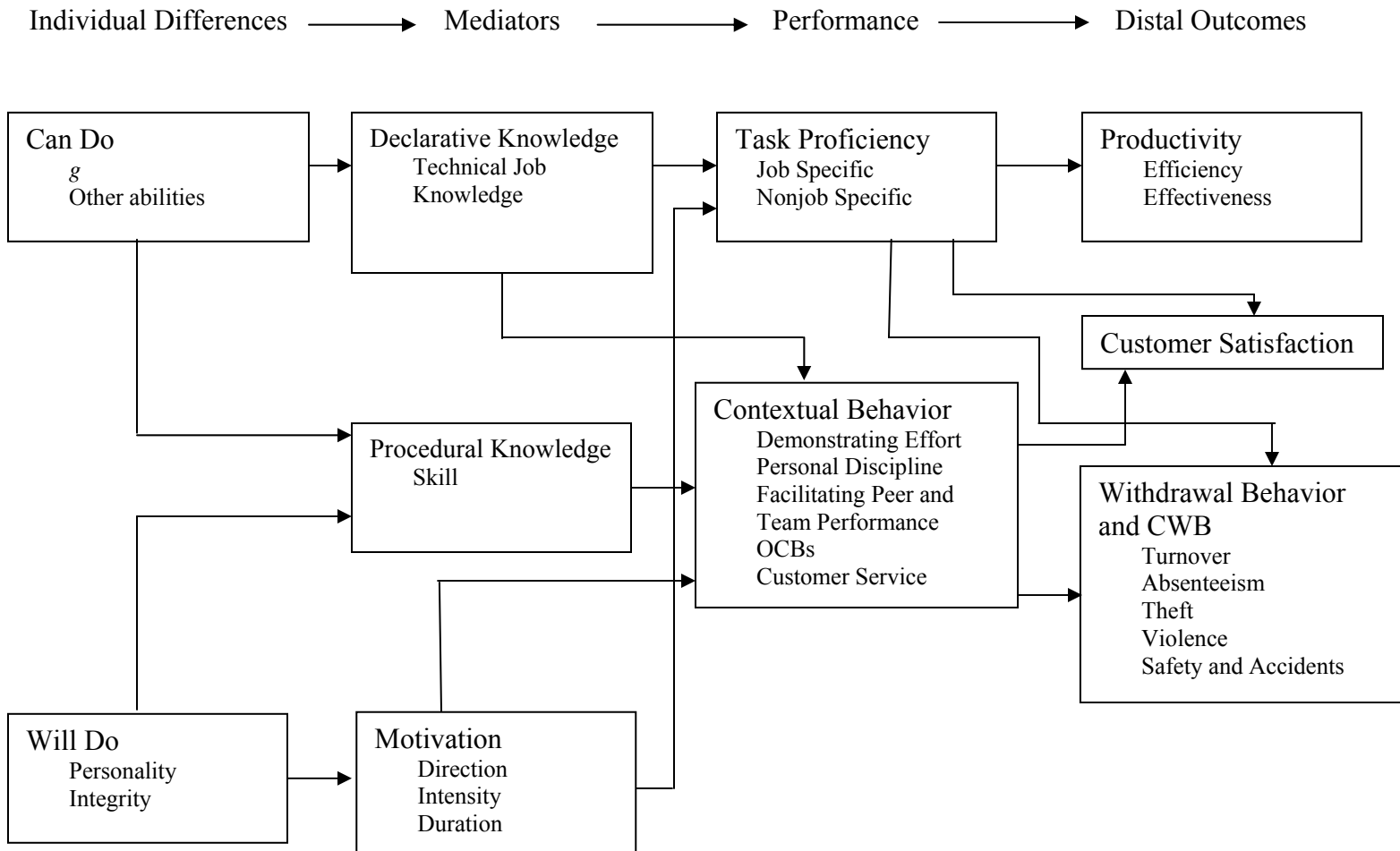Individual Differences ⟶ Mediators ⟶ Performance ⟶ Distal Outcomes

Can Do *g* Other abilities	**Declarative Knowledge** Technical Job Knowledge	**Task Proficiency** Job Specific Nonjob Specific	**Productivity** Efficiency Effectiveness

Customer Satisfaction

Procedural Knowledge
Skill

Contextual Behavior
Demonstrating Effort
Personal Discipline
Facilitating Peer and
Team Performance
OCBs
Customer Service

Withdrawal Behavior and CWB
Turnover
Absenteeism
Theft
Violence
Safety and Accidents

Will Do
Personality
Integrity

Motivation
Direction
Intensity
Duration

Figure 2. Performance model.

Survival Function at mean of covariates
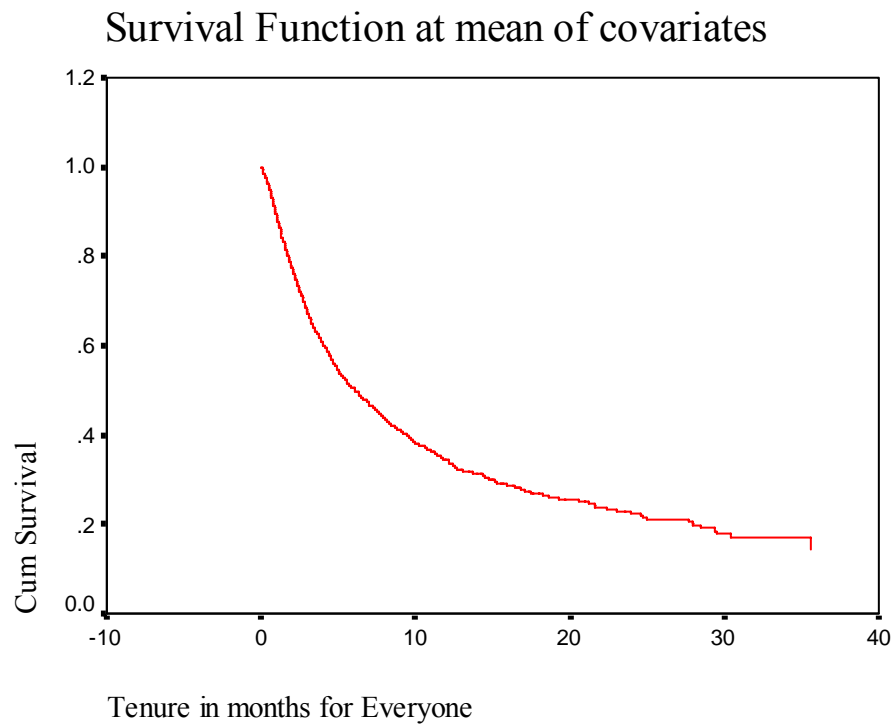
Figure 3. Survival function for turnover.

Hazard Function at mean of covariates
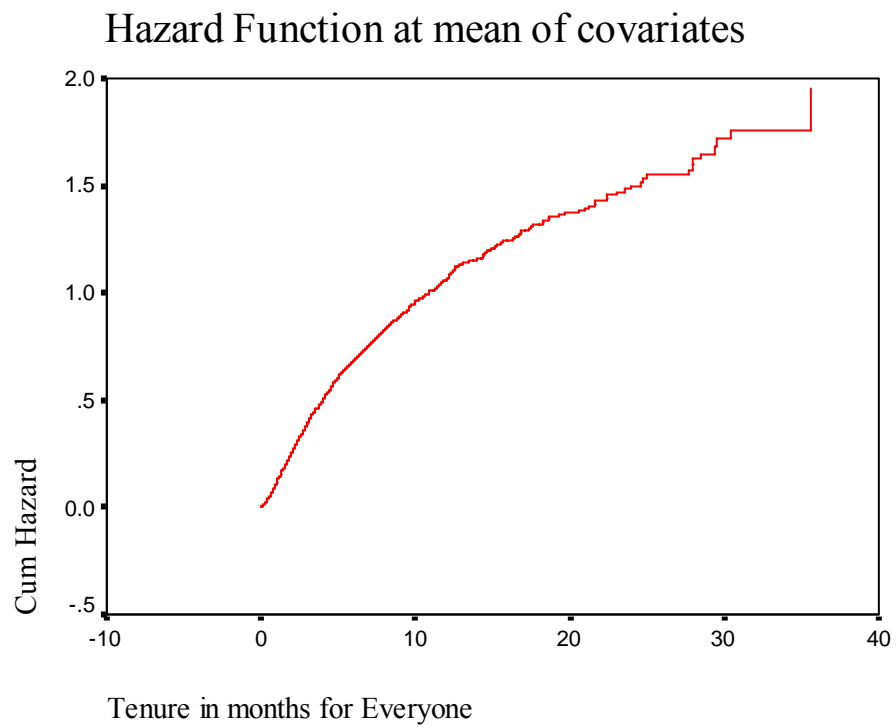
Figure 4. Hazard function for turnover.

Survival Function for patterns 1 - 2
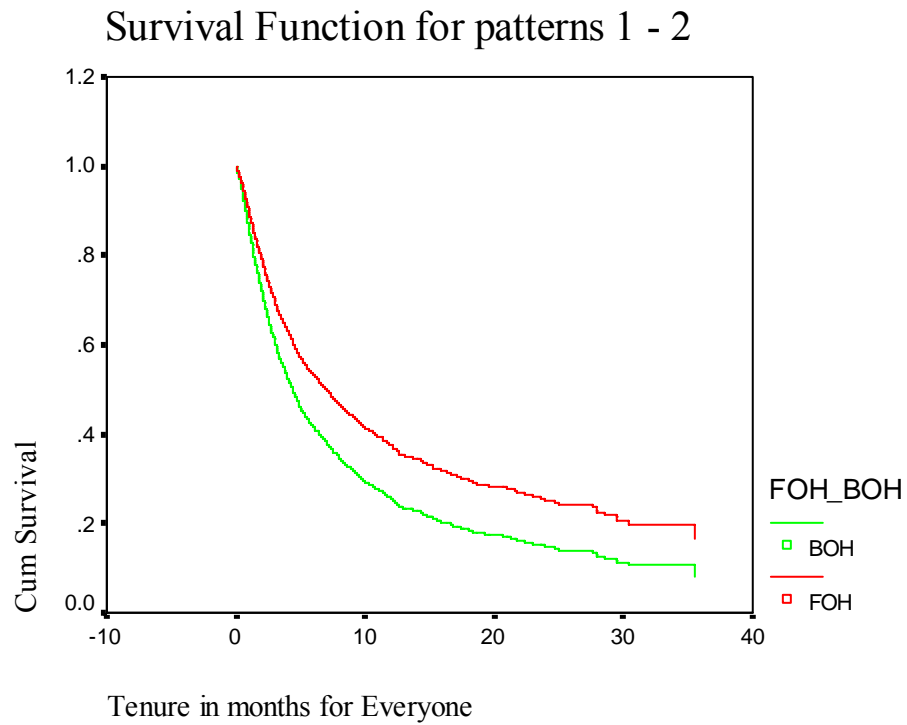
Figure 5. Survival function for turnover by position.

Hazard Function for patterns 1 - 2
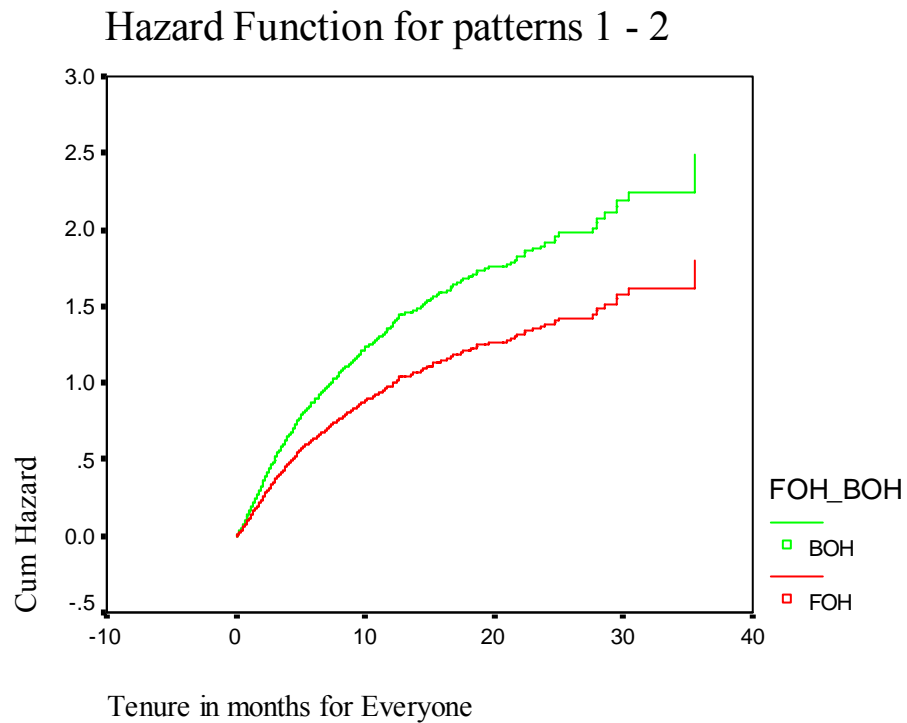
Figure 6. Hazard function for turnover by position.

Survival Function at mean of covariates
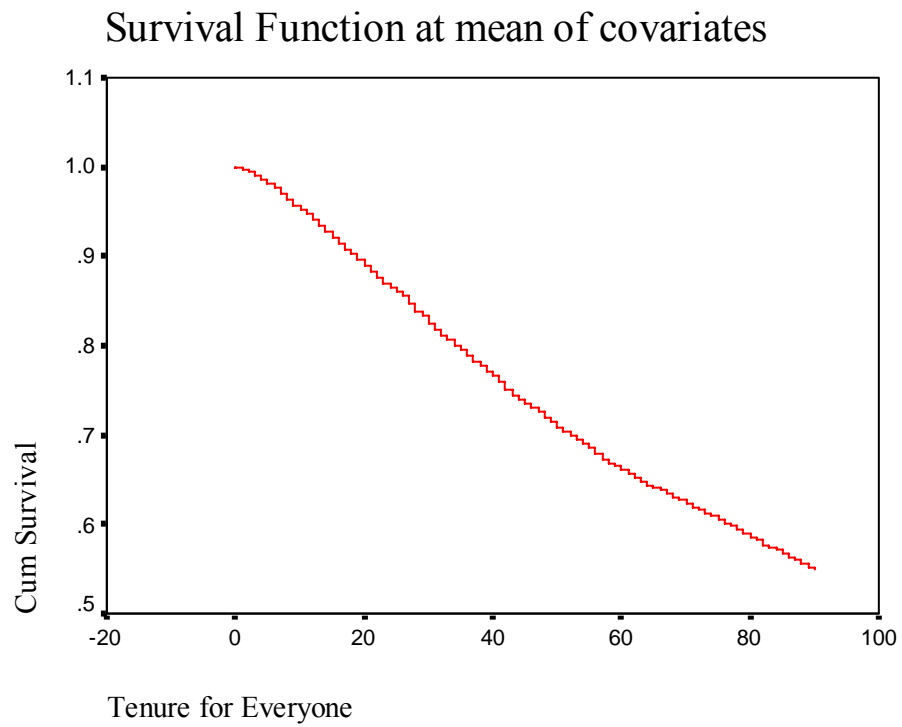
Figure 7. Survival function for 90 day turnover.

Hazard Function at mean of covariates
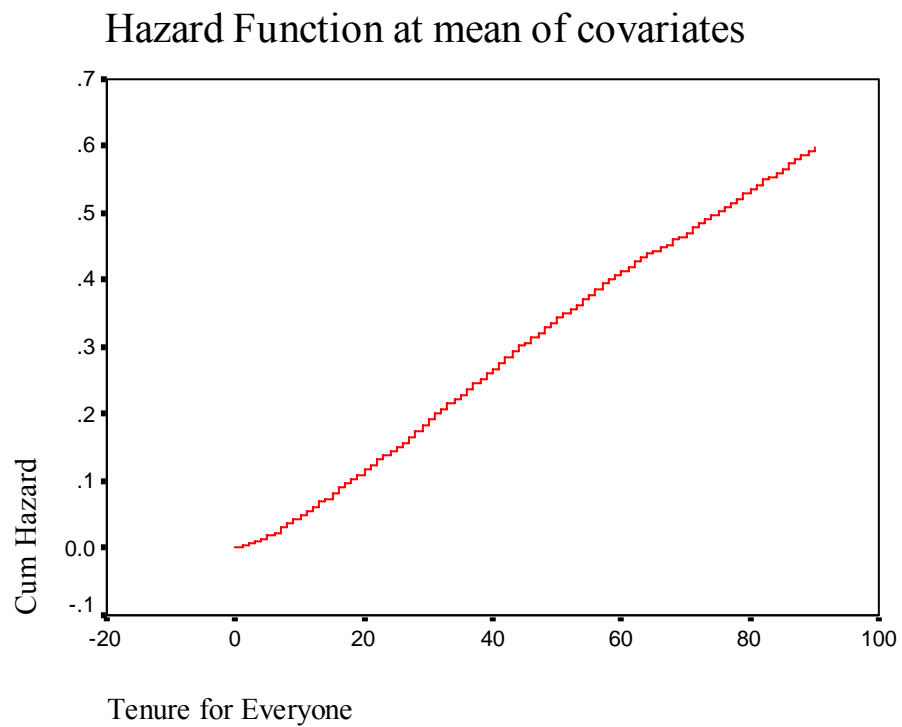
Figure 8. Hazard function for 90 day turnover.

Survival Function at mean of covariates
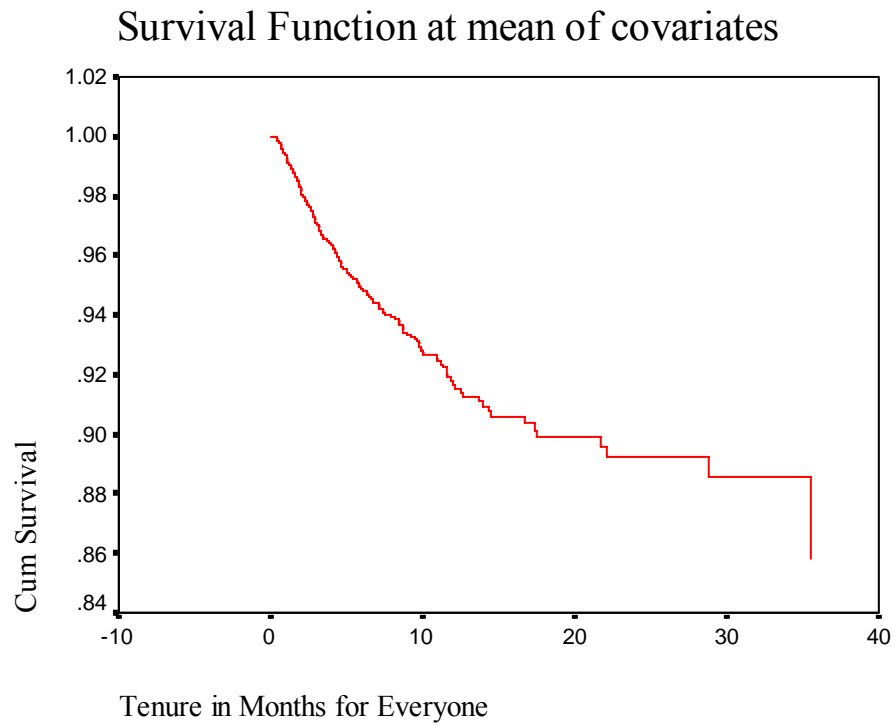
Figure 9. Survival function for involuntary turnover.

Hazard Function at mean of covariates

Figure 10. Hazard function for involuntary turnover.

Survival Function at mean of covariates

Tenure in months for everyone

Figure 11. Survival function for job abandonment.

Hazard Function at mean of covariates

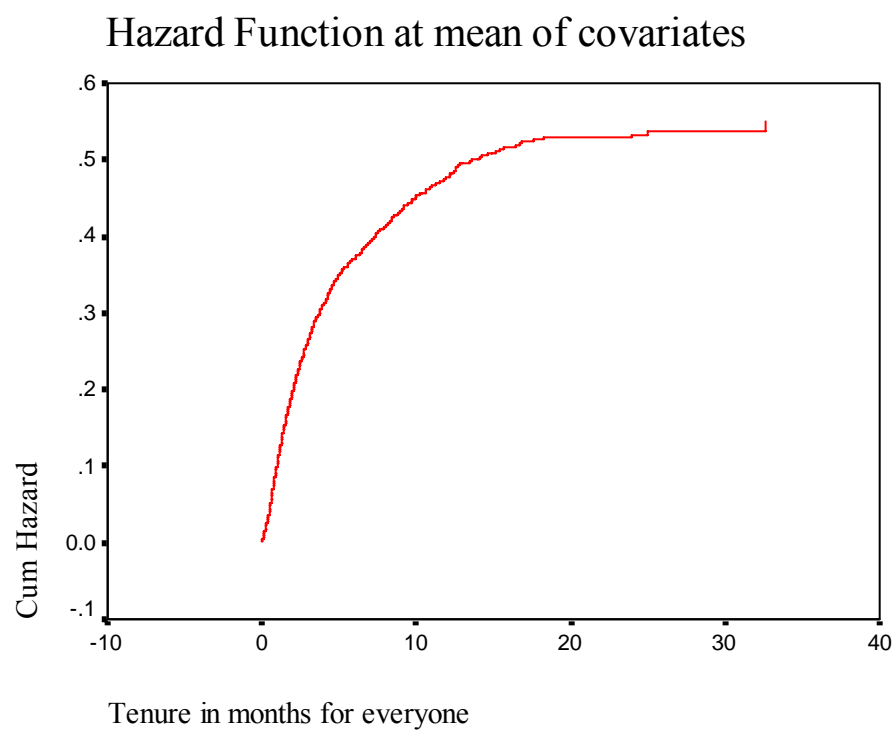Tenure in months for everyone
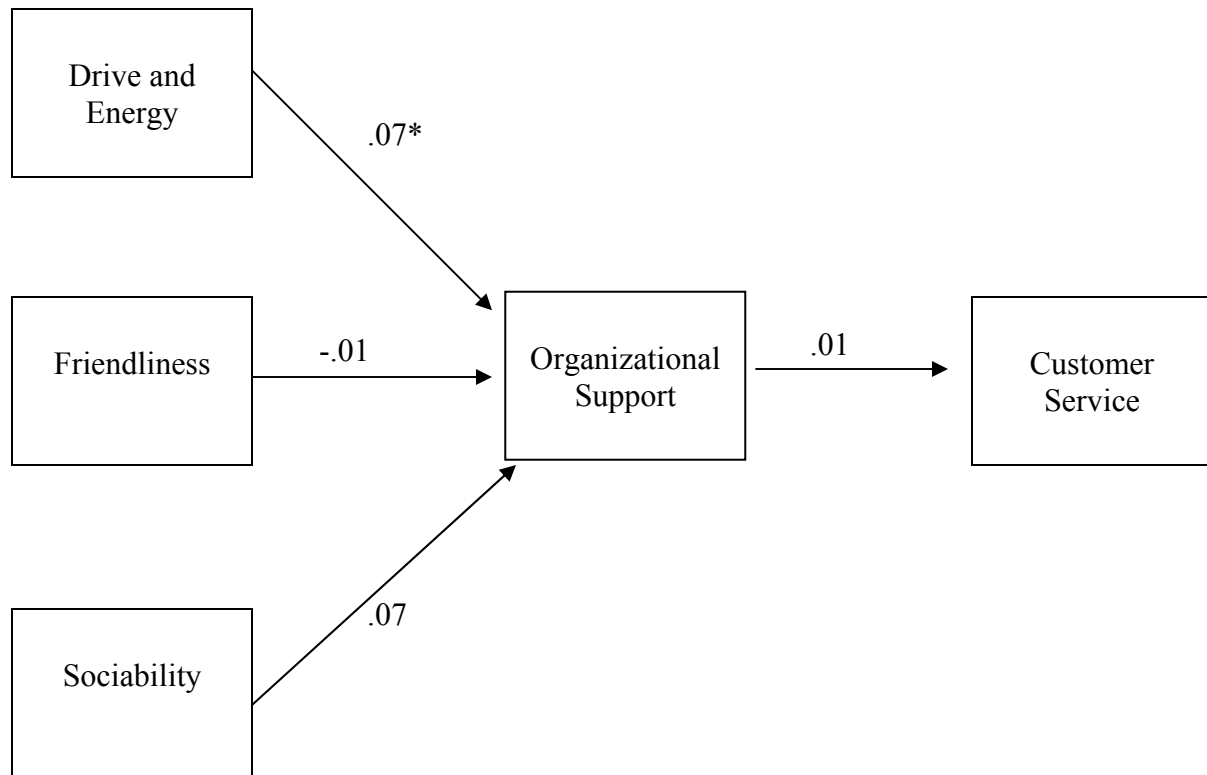
Figure 12. Hazard function for job abandonment.

Figure 13. Customer service performance model with path coefficients.
    p <.05

APPENDIX A

SAMPLE SERVICE QUESTIONNAIRE ITEMS

You are sometimes bubbling over with energy and sometimes very sluggish.

You find it easy to meet new people.

You find yourself hurrying to get places even when there is plenty of time.

You would like to have your supervisor set definite deadlines for completing your work.

You are unhappy unless things in your company go pretty much as you want them to.

Note: Response options: yes, no, or ?. Some items are negatively scored (i.e., a negative response reveals a higher standing on that trait). Not all items are shown due to the proprietary nature of the instrument. Sample items are used with permission of copyright holders, Batrus Hollweg International Selection Services Ltd.

APPENDIX B

PERFORMANCE DIMENSIONS

Dimension	Description
Grooming Standards/ Appearance	Image represents a good ambassador of the organization; adheres to grooming standards and uniform requirements; takes pride in appearance and the impression you have on others.
Reliability	Not absent or late to work; the rest of the team is assured that you will arrive as scheduled.
Fun	Tolerate frustration and remain composed under pressure; mood is consistent and upbeat; co-workers view you as even-tempered and positive; have fun at work and enjoy job and co-workers.
Ability	Have the skills and knowledge to do the job; strive to continuously improve skills in current job and through cross-training.
Guest Service	Comfortable interacting and communicating with others and understanding their needs; upbeat, positive, and friendly with guests and co-workers.
Team Player	Value the perspective and contributions of co-workers; share information with those who need it; show loyalty to those who are absent; help co-workers when needed.
Initiative	Identify opportunities and frequently expend effort for the benefit of guests/co-workers, the restaurant and the company.
Stamina	Demonstrate both physical and mental stamina; usually quick, responsive, and display a sense of urgency; action-oriented and able to keep going during stressful situations and long shifts.
Cooperation	Consistently follow and work within the policies and procedures of this restaurant and management; follow company standards, procedures, and specifications.

APPENDIX C

PERSONALITY AND PERFORMANCE ALIGNMENT MATRIX

Competency Matrix
Hourly Competencies & BHI SQ™ Scales

Instructions: The purpose of the following exercise is to establish a clear alignment between the SQ scales and Applebee's hourly competencies. Please identify which SQ scales would most likely predict performance on the following competencies. High differentiation is important, so please rate a scale "very strong" if it has a clear, direct relationship with the competency *or* rate "slight (or no) relationship" if the connection between the competency and the scale is barely apparent. Please refer to the competency descriptions and behavioral anchors in the accompanying document to assist you during this process. Thanks for your help, and feel free to ask me any questions.

Hourly Competencies ↓	SQ Scales				
	Drive and Energy	**Sociability**	**Emotional Consistency**	**Friendliness**	**Acceptance of Authority**
Grooming Standards/Appearance	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship
Reliability	1 – Moderate relationship	1 – Moderate relationship	1 – Moderate relationship	1 – Moderate relationship	1 – Moderate relationship
Fun	2 – Strong relationship	2 – Strong relationship	2 – Strong relationship	2 – Strong relationship	2 – Strong relationship
Ability	3 – Very Strong relationship	3 – Very Strong relationship	3 – Very Strong relationship	3 – Very Strong relationship	3 – Very Strong relationship
Guest Service	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship
Team Player	1 – Moderate relationship	1 – Moderate relationship	1 – Moderate relationship	1 – Moderate relationship	1 – Moderate relationship
Initiative	2 – Strong relationship	2 – Strong relationship	2 – Strong relationship	2 – Strong relationship	2 – Strong relationship
Stamina	3 – Very Strong relationship	3 – Very Strong relationship	3 – Very Strong relationship	3 – Very Strong relationship	3 – Very Strong relationship
Cooperation	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship	0 – Slight (or no) relationship

REFERENCES

Abelson, M. A. (1987). Examination of avoidable and unavoidable turnover. *Journal of Applied Psychology, 72*, 382-386.

Allport, G. W. & Oldbert, H. S. (1936). Trait-names: A psycholexical study. *Psychological Monographs, 47*(211).

American Educational Research Association, American Psychological Association & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Psychological Association.

Alonso, A., Viswesvaran, C., & Sanchez, J. I. (2001). *The mediating effects of task and contextual performance*. Poster presented at the Annual Conference of the Society for Industrial and Organizational Psychology, San Diego, CA.

Anderson, G. & Viswesvaran, C. (1998). *An update on the validity of personality scales in personnel selection: A meta-analysis of studies published after 1992*. Paper presented at the 13th Annual Conference for the Society of Industrial and Organizational Psychology, Dallas.

Arvey, R. D. & Murphy, K. R. (1998). Performance evaluation in work settings. *Annual Review of Psychology, 49*, 141-168.

Ashton, M. C. (1998). Personality and job performance: The importance of narrow traits. *Journal of Organizational Behavior, 19*, 289-303.

Ashton, M. C., Jackson, D. N., Paunonen, S. V., Helmes, E., & Rothstein, M. G. (1995). The criterion validity of broad factors scales versus specific trait scales. *Journal of Research in Personality, 29*, 432-442.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Barrick, M. R. & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1-26.

Barrick, M. R. & Mount, M. K. (1993). Autonomy as the moderator of the relationships between the Big Five personality dimensions and performance. *Journal of Applied Psychology, 78*, 111-118.

Barrick, M. R. & Mount, M. K. (2003). Meta-analysis of the relationship between the five-factor model of personality and Holland's occupational types. *Personnel Psychology, 56*, 45-74.

146

Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *International Journal of Selection and Assessment, 9*(1/2), 9-30.

Barrick, M. R., Stewart, G. L., Neubert, M. J., & Mount, M. K. (1998). Relating member ability and personality to work-team processes and team effectiveness. *Journal of Applied Psychology, 83*, 377-391.

Barrick, M. R., & Zimmerman, R. D. (2005). Reducing voluntary, avoidable turnover through selection. *Journal of Applied Psychology, 90*, 159-166.

Bartram, D. (2005). The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology, 90*, 1185-1203.

Bartram, D., Robertson, I. T., & Callinan, M. (2002). Introduction: A framework for exanimining organizational effectiveness. In I. T. Robertson, M. Callinan, & D. Batram (Eds.), *Organizational effectiveness: The role of psychology* (pp.1-10). Chichester, UK: Wiley.

Batrus Hollweg International (2005). *The hourly assessment technical manual.* Plano, TX: Batrus Hollweg, International.

Bem, D., & Allen, A. (1974). On predicting some of the people some of the time: The search for cross-situational consistencies in behavior. *Psychological Review, 81*, 506–520.

Bettencourt, L. A., Gwinner, K. P., & Meuter, M. L. (2001). A comparison of attitude, personality, and knowledge predictors of service-oriented organizational citizenship behaviors. *Journal of Applied Psychology, 86*, 29-41.

Bing, M., Stewart, S., Davison, H., Green, P., McIntyre, M., & James, L. (2007). An integrative typology of personality assessment for aggression: Implications for predicting counterproductive workplace behaviors. *Journal of Applied Psychology, 92*, 722-744.

Borman, W. C., Buck, D. E., Hanson, M. A., Motowidlo, S. J., Stark, S., & Drasgow, F. (2001). An examination of the comparative reliability, validity, and accuracy of performance ratings made using computerized adaptive rating scales. *Journal of Applied Psychology, 86*, 965-973.

Borman, W. C. & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt, W. C. Borman, and Associates (Eds.), *Personnel selection in organizations* (pp.71-98). San Francisco: Jossey-Bass.

Borman, W. C., Penner, L. A., Allen, T. D., & Motowidlo, S. J. (2001). Personality predictors of citizenship performance. *International Journal of Selection and Assessment, 9*, 52-69.

147

Borman, W. C., White, L. A., Pulakos, E. D., & Oppler, S. H. (1991). Models of supervisory job performance ratings. *Journal of Applied Psychology, 76*, 863-872.

Bornstein, R. F. (2002). A process dissociation approach to objective-projective test score interrelationships. *Journal of Personality Assessment, 78*, 47–68.

Bouchard, T. J., Jr. (1997). Genetic influence on mental abilities, personality, vocational interests and work attitudes. In C. L. Cooper & I. T. Roberston (Eds.), *International review of industrial and organizational psychology* (1st ed., pp. 63-130). Chicago: Rand McNally.

Boulding, W., Kalra, A., Staelin, R., & Zeithaml, V. A. (1993). A dynamic process model of service quality: From expectations to behavioral intentions. *Journal of Marketing Research, 30*, 7-27.

Campbell, J. P. (1990). Modeling the performance predication problem in industrial and organizational psychology. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 1, pp.687-732). Palo Alto, CA: Consulting Psychologists Press.

Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (1993). A theory of job performance. In N. Schmitt and W. C. Borman (Eds.), *Personnel selection in organizations* (pp.35-70). San Francisco: Jossey-Bass.

Cascio, W. (1991). *Costing human resources: The financial impact of human behavior in organizations* (3rd Edition). Boston: Kent Publishing Company.

Conte, J. M. & Gintoft, J. N. (2005). Polychronicity, Big Five personality dimensions, and sales performance. *Human Performance, 18*, 427-444.

Cortina, J. M., Goldstein, N. B., Payne, S. C., Davison, H. K., & Gilliland, S. W. (2000). The incremental validity of interview scores over and above cognitive ability and conscientiousness scores. *Personnel Psychology, 53*, 325-352.

Costa, P. T., & McCrae, R. R. (1998). From catalogue to classification: Murray's needs and the model. *Journal of Personality and Social Psychology, 55*, 258-265.

Costa, P. T., & McCrae, R. R. (1992). *The NEO-PI Personality Inventory*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T. & Widiger, T. A. (eds.) (1994*). Personality disorders and the five-factor model of personality*. Washington, D. C.: American Psychological Association.

Cronbach, L. J. & Gleser, G. C. (1957). *Psychological tests and personnel decisions*, University of Illinois, Urbana IL.

Dalal, R. S. (2005). A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior. *Journal of Applied Psychology, 90*, 1241-1255.

Digman, J. M. (1990). Personality structure: Emergence of the model. In M. R. Rosenzweig & L. W. Porter (Eds.), *Annual review of psychology* (Vol. 41, pp. 417-440). Palo Alto, CA: Annual Reviews.

Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology, 73*, 1246-1256.

Digman, J. M. & Shmelyov, A.G. (1996). The structure of temperament and personality in Russian children. *Journal of Personality and Social Psychology, 71*, 341-351.

Digman, J. M. & Takemoto-Chock, M. K. (1981). Factors in the natural language of personality: Re-analysis and comparison of six major studies. *Multivariate Behavioral Research, 16*, 149-170.

Dooney, J. (2005). *The cost of turnover*. Alexandria, VA: Society for Human Resource Management.

Dudley, N. M., Orvis, K. A., Lebiecki, J. E., Cortina, J. M. (2006). A meta-analytic investigation of conscientiousness in the prediction of job performance: Examining the intercorrelations and the incremental validity of narrow traits. *Journal of Applied Psychology*, *91*, 40–57.

Erickson, P. B. (2004, May 16). Employer hiring tests grow sophisticated in quest for insight about applicants. *Knight Ridder Tribune Business News*, 1.

Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology*, *54*, 297–327.

Fishbein, M. & Ajzen, I. (1974). Attitudes towards objects as predictors of single and multiple behavioral criteria. *Psychological Review, 81*, 59-74.

Frei, R. L. (1997). *Service orientation inventories: Is faking a good thing?* Unpublished manuscript.

Frei, R. L. & McDaniel, M. A. (1998). Validity of customer service measures in personnel selection: A review of criterion and construct evidence. *Human Performance, 11*, 1-27.

Furnham, A. (2006). Personality factors predict absenteeism in the workplace. *Individual Differences Research, 4*, 68-77.

Gellatly, I & Irving, P. (2001). Personality, autonomy, and contextual performance of managers. *Human Performance, 14*, 231-245.

Galton, F. (1884). Measurement of character. *Fortnightly Review, 36*, 179-185.

Gatewood, R. D. & Field, H. S. (2004). *Human resource selection*. Mason, OH: South-western

Giancola, F. (2006). The generation gap: More myth than reality. *Human Resource Planning, 29*, 32-37.

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management, 26*, 463-488.

Griffin, R. K. (1995). Personality characteristics and their relationship to foodserver performance. *Journal of College and University Foodservice, 2*, 31-42.

Guilford, J. S., Zimmerman, W. S., & Guilford, J. P. (1976) *The Guilford Zimmerman Temperament Survey handbook.* San Diego, CA: EdITS.

Guilford, J. P., Christianson, P. R., & Bond, N. A. (1993). *The Dynamic Factors Survey manual*. Menlo Park, CA: Mind Garden.

Guilford, J. P., Christianson, P. R., Bond, N. A., & Sutton, M. A. (1954). A factor analysis study of human interests. *Psychological Monograph, 68*.

Guzzo, R. A. & Dickson, M. A. (1996). Teams in organizations. Recent research on performance and effectiveness. *Annual Review of Psychology, 47*, 307-338.

Goldberg, L. R. (1995). What the hell took so long? Donald W. Fiske and the Big-Five structure. In P. E. Shrout & S. T. Fiske (Eds.), *Personality research, methods and theory: A festschrift honoring Donald W. Fiske* (pp. 29-43). Hillsdale, NJ: Erlbaum.

Guion, R. M. & Gottier, R. F. (1965). Validity of personality measures in personnel selection. *Personnel Psychology, 18*, 135-164.

Heller, M. (2005). Court ruling that employer's integrity test violated ADA could open door to litigation. *Workforce Management, 84,* 74-77.

Hira, N. (2007). You raised them, now manage them. *Fortune, 155*, 38-44.

Hoffman, B. J., Blair, C. A., Meriac, J. P., & Woehr, D. J. (2007). Expanding the criterion domain? A quantitative review of the OCB literature. *Journal of Applied Psychology, 92*, 555-566.

Hogan, J., & Hogan, R (1992). *Hogan Personality Inventory manual*. Tulsa, OK: Hogan Assessment Systems.

Hogan, J., Hogan, R., & Busch, C. M. (1984). How to measure service orientation. *Journal of Applied Psychology, 69*, 167-173.

Hogan, J., & Holland, B. (2003). Using theory to evaluate personality and job-performance relations: A socioanalytic perspective. *Journal of Applied Psychology, 88,* 100-112.

Hogan, J. & Roberts, B. W. (1996). Issues and non-issues in the fidelity-bandwidth trade-off. *Journal of Organizational Behavior, 17*, 627-637.

Hogan, J., Rybicki, S. L., Motowidlo, S. J., & Borman, W. C. (1998). Relations between contextual performance, personality and occupational advancement. *Human Performance, 11*, 189-207.

Hough, L. M. (1992). The "Big Five" personality variables-construct confusion: Description versus prediction. *Human Performance, 5*(1&2), 139-155.

Hough, L. M. (1997). The millennium for personality psychology: New horizons or good old daze. *Applied Psychology: An International Review, 47,* 233-261.

Hough, L. M. (2001). I/Owes its advances to personality. In B. W. Roberts and R. Hogan (Eds.), *Personality psychology in the workplace* (pp.19-44). Washington, DC: American Psychological Association.

Hough, L. M. & Ones, D. S. (2001). The structure, measurement, validity, and use of personality variables in industrial, work, and organizational psychology. In N. Anderson, D. S. Ones, H. Kepir, and C. Viswesvaran (Eds.), *Handbook of industrial, work, and organizational psychology* (Vol. 1, pp. 233-277). London: Sage.

Hough, L. M. & Furnham, A. (2003). Use of personality variables in work settings. In W. C. Borman, D. R. Ilgen, and R. J. Klimoski (Eds.), *Handbook of psychology* (Vol. 12, pp. 131-169). Hoboken, NJ: John Wiley & Sons, Inc.

Hunt, S. T. (1996). Generic work behavior: An investigation into the dimensions of entry-level, hourly job performance. *Personnel Psychology, 49*, 51-83.

Hunter, J. E. (1983). A causal analysis of cognitive ability, job knowledge, job performance, and supervisor ratings. In F. Landy, S. Zedek, and J. Cleveland (Eds.), *Performance measurement and theory* (pp. 257-266). Hillsdale, NJ: Erlbaum.

Hunter, J. E., & Hunter, R. F. (1984). Validity and utility of alternate predictors of performance. *Psychological Bulletin, 96*, 72-98.

Hurley, R. F. (1998). Customer service behavior in retail setting: A field study of the effect of service provider personality. *Journal of the Academy of Marketing Science, 26,* 115-127.

Hurtz, G. M. & Donovan, J. J. (2000). Personality and job performance: The Big Five revisited. *Journal of Applied Psychology, 85,* 869-879.

Hsu, C. (2004). The testing of America. *U.S. News and World Report, 137,* 68-69.

Huselid, M. A. (1995). The impact of human resources management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal, 38,* 635-672.

Inceoglu, I. & Bartram, D. (2006). The validity of personality measures depends on the quality of the criterion measure. Paper presented at the 21st Annual Conference of the Society of Industrial and Organizational Psychology, Dallas.

James, L. R. (1998). Measurement of personality via conditional reasoning. *Organizational Research Methods*, *1*, 131–163.

Jenkins, M., & Griffith, R. (2004). Using personality constructs to predict performance: Narrow or broad bandwidth. *Journal of Business and Psychology, 19*, 255-269.

Kehoe, J. K. & Dickter, D. N. (2006). Customer service quality: Selecting valued performers. In L. Fogli (Ed.), *Customer service delivery: Research and best practices* (pp.135-172). San Francisco: Jossey-Bass.

LaHuis, D. M., Martin N. R., & Avis, J. M. (2005). Investigating nonlinear conscientious-job performance relations for clerical employees. *Human Performance, 18,* 199-212.

Le, H., IIes, R., & Holland, E. (2007). Too much of a good thing? Curvilinearity between emotional stability and job performance. Paper presented at the 22nd Annual Conference of the Society of Industrial and Organizational Psychology, New York.

LePine, J. A., Hanson, M. A., Borman, W. C., & Motowidlo, S. J. (2000). Contextual performance and teamwork: Implications for staffing. In G. R. Ferris (Ed.), *Research in personnel and human resources management* (Vol. 19, pp/ 53-90). Amsterdam: Elsevier.

Lin, N. Chiu, H. & Hsieh, Y. (2001). Investigating the relationship between service providers' personality and customers' perceptions of service quality across gender. *Total Quality Management, 12,* 57-67.

London House (1992). *Personnel Selection Inventory information guide*. Rosemont, IL: London House.

Markon, K. E., Krueger, R. F., & Watson, D. (2005). Delineating the structure of normal and abnormal personality: An integrative hierarchical approach. *Journal of Personality and Social Psychology, 88*, 139-157.

McCloy, R. A., Campbell, J. P., & Cudeck, R. (1994). A confirmatory test of a model of performance determinants. *Journal of Applied Psychology, 79*, 493-505.

McCrae, R. R. & Costa, P. T., Jr. (1997). Personality trait structure as a human universal. *American Psychologist, 52*, 509-516.

McLellan, R. A. & Paajanen, G. (1994). *PDI Customer Service Inventory manual*. Minneapolis, MN: Personnel Decisions.

Mischel, W. (1977). The interaction of person and situation. In D.Magnusson & N. S.Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology* (pp. 333–352). Hillsdale, NJ: Erlbaum.

Morgeson, F. P., Reider, M. H., & Campion, M. A. (2005). Selecting individuals in team settings: The importance of social skills, personality characteristics, and team work knowledge. *Personnel Psychology, 58*, 583-611.

Motowidlo, S. J. (2003). In W. C. Borman, D. R. Ilgen, and R. J. Klimoski (Eds.), *Handbook of psychology* (Vol. 12, pp.39-53). Hoboken, NJ: John Wiley & Sons, Inc.

Motowidlo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human Performance, 10*, 71-84.

Motowdilo, S. J., Brownlee, A. L., & Schmitt, M. J. (1998). *Relations between individual differences in personality, ability, and experience and knowledge, skill, and performance in servicing retail customers*. Paper presented at the meeting of the Society for Industrial and Organizational Psychology, Dallas, TX.

Motowidlo, S., Hooper, A., & Jackson, H. (2006). Implicit policies about relations between personality traits and behavioral effectiveness in situational judgment items. *Journal of Applied Psychology, 91*, 749-761.

Motowidlo, S. J., & Van Scotter, J. R. (1994). Evidence that task performance should be distinguished between contextual performance. *Journal of Applied Psychology, 79*, 475-480.

Murphy, K. R., & Dziewecynski, J. L. (2005). Why don't measures of broad dimensions of personality perform better as predictors of job performance? *Human Performance, 18*, 343-357.

Mount, M. K., Barrick, M. R., & Stewart, G. L. (1998). model of personality and performance in jobs involving interpersonal interactions. *Human Performance, 11*, 145-165.

National Restaurant Association (2007). Restaurant industry facts. Retrieved April 24, 2007, from http://www.restaurant.org/research/ind_glance.cfm

Neuman, G. A., Wagner, S. H., & Christianson, N. D. (1999). The relationship between work-team personality composition and the job performance of teams. *Group and Organization Management, 24*, 28-45.

Newtson, D., Engquist, G., & Bois, J. (1977). The objective basis of behavior units. *Journal of Personality and Social Psychology, 35*, 847-862.

Nikolau, I. (2003). Fitting the person to the organization: Examining the personality-job performance relationship from a new perspective. *Journal of Managerial Psychology, 18*, 639-648.

Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology, 66*, 574-583.

Nunnally, J. C. (1978). *Psychometric theory*. New York: McGraw-Hill.

O'Connell, M. & Kung, M. (2007). The cost of employee turnover. *Industrial Management, 40,* 100-114.

Olesen, E. P., McDaniel, M. A., & Snell, A. F. (1998). *Construct validity of customer service measures: An examination of convergent validity evidence*. Paper presented at the 13th annual conference of the Society of Industrial and Organizational Psychology, Dallas, TX.

Ones, D. S. & Viswesvaran, C. (1996a). What do pre-employment customer service scales measure? Explorations in construct validity and implications for personnel selection. Paper presented at the 11th annual conference of the Society of Industrial and Organizational Psychology, San Diego, CA.

Ones, D. S. & Viswesvaran, C. (1996b). Bandwidth-fidelity dilemma in personality measurement for personnel selection. *Journal of Organizational Behavior, 17*, 639-655.

Ones, D. S. & Viswesvaran, C. (2001). Personality at work: criterion-focused occupational personality scales used in personnel selection. In B. W. Roberts and R. Hogan (Eds.), *Personality psychology in the workplace* (pp.63-92). Washington, DC: American Psychological Association.

Ones, D. S. & Viswesvaran, C. (in press). Customer service scales: Criterion-related, construct, and incremental validity evidence. *In D. S. Ones & C. Viswesvaran (Eds.) Personality-based customer service scales* (pp. 1-42).

Ones, D. S., Viswesvaran, C., & Dilchert, S. (2005). Personality at work: Raising awareness and correcting misconceptions. *Human Performance, 18*, 389-404.

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.

Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance, 10*, 85-97.

Organ, D. W. & Paine, J. B. (1999). A new kind of performance for industrial and organizational psychology: Recent contributions to the study of organizational citizenship behavior. *International Review of Industrial and Organizational Psychology, 14*, 337-368.

Organ, D. W. & Ryan, K. (1995). A meta-analytic review of altitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology, 48*, 775-802.

Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Understanding customer expectations of service. *Sloan Management Review, 32*, 39-48.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing, 49*, 41-50.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1998). SERVQUAL: A multiple-item scale for measuring customer perceptions of service quality. *Journal of Retailing, 64*, 12-40.

Paunonen, S. V. (1998). Hierarchical organization of personality and prediction of behavior. *Journal of Personality and Social Psychology, 74*, 538-556.

Paunonen, S. V. & Ashton, M. C. (2001). Big Five factors and facets and the prediction of behavior. *Journal of Personality and Social Psychology, 81*, 524-539.

Paunonen, S. V. & Jackson, D. N. (2000). What is beyond the Big Five? Plenty! *Journal of Personality, 68*, 821-835.

Paunonen, S. V., Rothstein, M. G., & Jackson, D. N. (1999). Narrow reasoning about the use of broad personality measures in personnel selection. *Journal of Organizational Behavior, 20*, 389-405.

Peters, T. J. & Waterman, R. H. (1989). *In search of excellence: Lessons from America's best-run companies*. New York: Harper-Collins.

Roberts, B. W., Chernyshenko, O. S., Stark, S., & Goldberg, L. R. (2005). The structure of conscientiousness: An empirical investigation based on seven major personality questionnaires. *Personnel Psychology, 58*, 103-139.

Robie, C. & Ryan, A. M. (1999). Effects of nonlinearity and heteroscedasticity on the validity of conscientiousness in predicting overall job performance. *International Journal of Selection and Assessment, 7*, 157-169.

Robinson, S. L., & Bennett, R. J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *Academy of Management Journal*, 38(2), 555-572.

Rothstein, M. G. & Goffin, R. D. (2006). The use of personality measures in personnel selection: What does current research support? *Human Resource Management review, 16*, 155-180.

Rothstein, M. G. & Jelly, R. B. (2003). The challenge of aggregating studies of personality. In K. R. Murphy (Ed.), *Validity generalization: A critical review* (pp. 223-262). Mahweh, NJ: Lawrence Erlbaum.

Rotundo M., & Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of Applied Psychology, 87*, 66-80.

Ryan, A. M. & Ployhart, R. E. (2003). Customer service behavior. In W. C. Borman, D. R. Ilgen, and R. J. Klimoski (Eds.), *Handbook of psychology* (Vol. 12, pp. 377-395). Hoboken, NJ: John Wiley & Sons, Inc.

Sackett, P. R., & DeVore, C. J. (2001). Counterproductive behaviors at work. In N. Anderson, D. S. Ones, H. P. Sinangil, & C. Viswesvaran (Eds.), *Handbook of industrial, work, and organizational psychology* (Vol. 1, 145-164), London: SAGE Publications.

Salgado, J. F. (1997). The five factor model of personality and job performance in the European community. *Journal of Applied Psychology, 82*, 30-43.

Schmidt, F. L. (1980). The measurement of job performance. Unpublished manuscript.

Schmidt, F. L. & Hunter, J. E. (1992). Causal modeling of processes determining job performance. *Current Directions in Psychological Science, 1*, 89-92.

Schmidt, F. L. & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*, 262-274.

Schneider, B. (1980). The service organization: Climate is crucial. *Organizational Dynamics, 7*, 52-65.

Schneider, B. (1990). The climate for service: An application of the climate construct. In B. Schneider (Ed.), *Organizational climate and culture* (pp. 383-412). San Francisco: Jossey-Bass.

Schneider, B., & Bowen, D. E. (1993). The service organizational: Human resources management is crucial. *Organizational Dynamics, 21*, 39-52.

Schneider, B., & Bowen, D. E. (1995). *Winning the service game*. Boston: Harvard Business Review.

Schneider, R. J. & Hough, L. M. (1995). Personality and industrial/organizational psychology. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 75-129). Chichester, England: Wiley.

Schneider, R. J., Hough, L. M., & Dunnette, M. D. (1996). Broadsided by broad traits: How to sink science in five dimensions or less. *Journal of Organizational Behavior, 17*, 639-655.

Schneider, B. & Schmitt, N. (1986). *Staffing organizations*. New York: Scott, Foresman.

Schneider, B., Wheeler, J. K., & Cox, J. F. (1992). A passion for service: Using content analysis to explicate service client themes. *Journal of Applied Psychology, 77*, 705-716.

Schmitt, N. Cortina, J. M., Ingerick, M. J., & Wiechmann, D. (2003). Personnel selection and employee performance. In W. C. Borman, D. R. Ilgen, and R. J. Klimoski (Eds.), *Handbook of psychology* (Vol. 12, pp. 131-169). Hoboken, NJ: John Wiley & Sons, Inc.

Schmitt, M. C., Motowidlo, S. J., DeGroot, T., Cross, T., & Kiker, D. S. (1996). *Explaining the relationship between personality and job performance*. Paper presented at the meeting of the Society for Industrial and Organizational Psychology, San Diego, CA.

Shippmann, J.S., Ash, R., Battista, M., Carr, L., Eyde, L., Hesketh, B., Kehoe, J., Pearlman, K., Prien, E., & Snachez (2000). The practice of competency modeling. *Personnel Psychology, 53*, 703-739.

Smith, P. C. & Kendall, L. M. (1963). Retranslation of expectations. *Journal of Applied Psychology, 47*, 149-155.

Somer, O. & Goldberg, L. R. (1999). The structure of Turkish trait-descriptive adjectives. *Personality Processes and Individual Differences, 76*, 431-450.

Stewert, G. L. (1999). Trait bandwidth and stages of job performance: Assessing differential effects for conscientiousness and its subtraits. *Journal of Applied Psychology, 84*, 959-968.

Stewert, G. L. & Carson, K. P. (1995). Personality dimensions and domains of service performance: A field investigation. *Journal of Business & Psychology, 9*, 365-378.

Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Personnel Psychology, 44*, 703-742.

Tett, R. P., Steele, J. R., & Beauregard, R. S. (2003). Broad and narrow measures on both sides of the personality-job performance relationship. *Journal of Organizational Behavior, 24*, 335-356.

Tupes, E. C., & Christal, R. E. (1961). *Recurrent Personality Factors Based on Trait Ratings* (ASD-61-97). Lackland Air Force Base, TX: Aeronautical Systems Division, Personnel Laboratory.

U.S. Census Bureau (2007). Service annual survey. Retrieved April 24, 2007, from http://www.census.gov/econ/www/servmenu.html

Viswesvaran, C. (1993). Modeling job performance: Is there a general factor? Unpublished doctoral dissertation, University of Iowa, Iowa City, IA.

Viswesvaran, C. & Ones, D. S. (2000). Perspectives on models of job performance. *International Journal of Selection and Assessment, 8*, 216-226.

Viswesvaran, C. & Ones, D. S. (2005). Job performance: Assessment issues in personnel selection. In A. Evers, N. Anderson, and O. Voskuijl (Eds.), *The Blackwell handbook of personnel selection* (pp.354-375). Malden, MA: Blackwell Publishing.

Viswesvaran, C., Ones, D. S., & Schmidt, F. L. (1996). Comparative analysis of the reliability of job performance ratings. *Journal of Applied Psychology, 81*, 557-574.

Viswesvaran, C., Schmidt, F. L., & Ones, D. S. (2005). Is there a general factor in ratings of job performance? A meta-analytic framework for disentangling substantive and error influences. *Journal of Applied Psychology, 90*, 108-131.

Warr, P., Bartram, D., & Martin, T. (2005). Personality and sales performance: situational variation and interactions between traits. *International Journal of Selection and Assessment, 13*, 87-91.

Whetzel, D. L. & McDaniel, M. A. (2006). Staffing and selection strategies for service quality. In L. Fogli (Ed.), *Customer service delivery: Research and best practices* (pp.173-194). San Francisco: Jossey-Bass.

Winter, D. G., John, O. P., Stewart, A. J., Klohnen, E. C., & Duncan, L. E. (1998). Traits and motives: Toward an integration of two traditions in personality research. *Psychological Review*, *105*, 230–250.

Witt, L. A., Burke, L. A., Barrick, M. R., & Mount, M. K. (2002). The interactive effects of conscientiousness and agreeableness on job performance. *Journal of Applied Psychology, 87*, 164-169.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1988). Communication and control processes in the delivery of service quality. *Journal of Marketing, 52*, 35-48.