1-1-2011

An Investigation Into The Relationship Between Conscientiousness, Self-Awareness, And Occupational Stress Outcomes In Culinary Chefs

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AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN
CONSCIENTIOUSNESS, SELF-AWARENESS, AND
OCCUPATIONAL STRESS OUTCOMES IN CULINARY CHEFS

A Dissertation
Presented to
The Faculty of the Morgridge College of Education
University of Denver

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Philosophy

By
Tanja M. Hinterstoisser, M.A.

August 2011
Advisor: Patrick Sherry, Ph.D.
Abstract

The purpose of this study was to investigate whether, and to what extent, Conscientiousness, as part of the personality construct, and Self-Awareness, as part of the emotional intelligence construct, influence the occupational stress outcomes of absenteeism and burnout in culinary chefs. The research method and design selected for this study was a quantitative correlation and regression. The researcher selected the Self-Awareness factors from the ECI – 2.0, and the Conscientiousness factors from the NEO-FFI to measure the individual and interactive effect on absenteeism and burnout. The experience of burnout itself was measured the Maslach Burnout Inventory - GS, and absenteeism was measured by reported number of days absent from work. This study utilized an online survey of 66 questions, including 39 items based on these well-established measures in scholarly research and 27demographic items compiled by the researcher. Of the 213 restaurant chefs who were sent the survey, 70 responded rendering a return rate of 32.86%. The majority of the respondents were Caucasian males of an average age of 35. Nearly one-third of the sample was composed of Executive Chefs, while approximately 29 percent were Sous-Chefs. Another 14 percent were Chef Owners, and 13 percent were Junior Chefs. The vast majority (89 percent) worked at a free-standing restaurant.
The findings of this study revealed that Conscientiousness significantly affect burnout in culinary chefs. No other tested variables correlated with statistical significance in this study. Several non-tested variables demonstrated significant correlations in the relationships between demographic data, Conscientiousness, and burnout primarily.

This study contributes to the field by adding information for future research ideas, literature reviews, research design, and data collection and analysis when utilizing Conscientiousness, Self-Awareness, burnout and absenteeism in the study of occupational stress outcomes. Specifically, it addressed some important first step finding for understanding how certain personality factors and emotional intelligence factors might influence occupational stress outcomes in culinary chefs.
Acknowledgements

Much gratitude is extended to my dissertation committee: I would like to thank Dr. Patrick Sherry, without whose perseverance and coaching would not have made it possible to actualize this goal. Thank you, also, to my committee members: Dr. Jesse Valdez, Dr. Barbara Vollmer, and Dr. Vijaya Narapareddy, whose dedication to students have made the completion of my defense possible.

I would be remiss to not credit and thank all those who I consider my family – Alison Cook, Linda Freeman, Karen Philbrick and Suzanne Dastin - for the words of encouragement and relentless faith in me; you have added laughter and doses of reality to this process. I thank you for having cheered me down the road to completion.

To my brave husband who firmly believed in my abilities and who tirelessly prodded me in completing this dissertation. His own dutifulness kept me on track; and his courage and desire for spiritual growth and change has kept me committed and recharged, particularly in times of doubt. Shawn, I am convinced you will soar, now and throughout your life!

Finally, and most importantly, I dedicate this project to my parents who have supported and encouraged me in all my educational pursuits. They have instilled in me the passion to do justice, love mercy, walk humbly and give thanks.

Thank you to all – not only have you made this possible – you make it worthwhile.
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Chapter One

Introduction

Occupational stress is now an epidemic in the workplace. Problems and loss of productivity resulting from occupational stress were estimated to cost $300 billion every year in the United States (Schwartz, 2004). Occupational stress is an important issue for health and safety of those employed. Prolonged exposure to occupational stress has the potential to result in psychological erosion, more often referred to as occupational burnout (Etzion, 1987). Since first stated by Freudenberger in 1974, occupational burnout has been recognized as a threat to the work force due to its negative effect on occupational retention, involvement and performance.

Over the past two decades or more, researchers have provided compelling impetus to employers to ensure appropriate working conditions are being used. In this process, they have encouraged management to understand the role of occupational stress in organizations and its effect on their employees. In spite of the clear recognition of and evidence for the existence of a relationship between occupational stressors and mental and physical outcomes among these “stressed” populations, characteristics of personnel that work under such conditions has been addressed less concretely and mostly separately. Concurrently, research has emphasized the importance of evaluating how certain personality characteristics and emotional intelligence factors contribute to the success and pitfalls of employees working in demanding environments.
The established link between occupational stressors and employee well-being places a clear obligation on employers and organizations at large to provide a healthy environment on those employed (Patterson, West, Lawthorn, & Nickell, 1997). This obligation is mostly attributed to the existing negative conditions that have effected in a decrease in the physical, mental, and emotional well-being (Greenberg, Stiglin, Finkelstein, & Berndt, 1993) along with a decrease in work productivity (Donald, Taylor, Johnson, Cooper, Cartwright, & Robertson, 2005) of those employed.

According to the American Institute of Stress (AIM), absenteeism due to occupational stress has escalated over the past few years. The conclusions of their findings reflect the impact that absenteeism has on the workforce: a) a survey on 800,000 workers representing 300 companies that show that the number of employees calling in sick because of stress tripled from 1996 to 2000; b) an estimated 1 million workers are reported absent daily due to occupational stress; c) a report from the European Agency for Safety and Health at work stating that over half of the 550 million working days per year in the U.S. were lost due to stress related absenteeism, and that one in five of the last minute no-shows were due to occupational stress. Consequently, they calculated that the continuance of unanticipated absenteeism can cost U.S. companies $602 per worker per day, and $3.5 million per year for large employers.

**Justification for the Study**

The population of practicing culinary chefs was selected due to an increasing focus in the contemporary literature on the high levels of stress, burnout, absenteeism and turnover exhibited by this particular group of professionals (Lee & Shin, 2005). In an increasingly growing number of research publications, chefs have been described as
being at maximal risk for mental, emotional, and physical/health-related issues due to reasons that include working in demanding work environments (Zopiatis, Kyprianou, & Pavlou, 2011; Nagasu, Sakai, Ito, Tomita, Temmyo, Ueno, & Shigeji, 2007), with an excessive workload (Murray-Gibbons & Gibbons, 2007; Smith & Carroll, 2006; Zohar, 1994), tight time-lines or pace of work (Murray-Gibbons & Gibbons, 2007), and in which bullying and threats of violence are ongoingly present (Nielsen, Notelaers, & Einarsen, 2010; Bloisi & Hoel, 2008; Murray-Gibbons & Gibbons, 2007; Johns & Menzel, 1999).

For clarity purposes, a broadened definition of culinary chefs will be used (positions that hold the title of various existing designations of chefs, e.g. Executive Chef, Sous Chef, Pastry Chef) in which chefs’ experiences will be references as a working unit. This is not intended to be interpreted as a blind merger of these several subgroup populations; rather, it intends to emphasize the appropriate industry-specific and role-specific designations of culinary professionals that manage, oversee, and decide on these highly collaborative and mutually dependent relationships in these kitchen environments.

The criteria for participant inclusion is obtained from the demographic data with an emphasis on selected items, including age, years of experience, and a self-reporting of “feeling stressed”. Pearson correlations will be assessed to determine relationships within and among the predictor and criterion measures. Multiple regression analyses will be used to evaluate the relative importance of the variables and the optimum contributions of Self-Awareness and Conscientiousness predicting absenteeism and burnout.

Although controversial in its definition and use, generally and most consistently emotional intelligence is defined as a set of interrelated abilities for identifying,
understanding, and managing emotions, both in self and others; its core facets incorporate resiliency and adaptability to stressful environments, including the ability to adaptively cope with rapidly changing circumstances. The assessment selected to assess emotional intelligence is the Emotional Competence Inventory – 2.0 (ECI – 2.0) (Goleman, 1998), which is used to assess four specific competency clusters of emotional intelligence: Self-Awareness, Self-Management, Social Awareness, and Social Skills. Personality constructs are assessed by utilizing one of the domains of the NEO-FFI (Costa & McCrae, 1992), which provides measures of five well-established domains of personality: Neuroticism, Extroversion, Openness to Experience, Agreeableness, and Conscientiousness. Degree of burnout affecting work performance is evaluated by using the Maslach Burnout Inventory, along with a demographic characteristic, absenteeism, measured in numbers of days absent. Additional demographic criteria evaluating individual stress experience will be utilized, including four yes/no statements on perception of current experiences of stress within and outside of the work environment.

The primary research methodology used to accomplish the goals of the research study will be the use of a correlation and regression analysis. Several authors conducted correlational studies between different measures of emotional intelligence and the NEO Five Factor Inventory, also referenced as The Big Five. The table below (Table 1) outlines these correlational studies, most of which give overall scores of emotional intelligence as they correlate with factors of The Big Five. The results on the Self-Report Emotional Intelligence Test (overall EI) and the BarOn Emotional Quotient Inventory (overall EQ-i) are taken from a study conducted by Brackett & Mayer (2003). Dawda & Hart noted even higher correlations between the BarOn Emotional Quotient Inventory
and the NEO Five-Factor Inventory (2000). Cluster-level results between the Emotional Competence Inventory and the NEO are demonstrated in studies by Boyatzis & Sala (2004) and Murensky (2000). The results of the Trait Emotional Intelligence Questionnaire (TEIQue; Overall EI) and the NEO scores derive from Petrides & Furnham (2003). Gosling, Rentfrow, and Swann (2003) studies and reported correlations between an alternative measure of The Big Five traits with the NEO.

Table 1

<table>
<thead>
<tr>
<th>Big Five / Emotional Intelligence Scales</th>
<th>Neuroticism</th>
<th>Expressiveness</th>
<th>Openness to Experience</th>
<th>Agreeableness</th>
<th>Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCEI: Total EI</td>
<td>-0.08</td>
<td>0.11</td>
<td>.25**</td>
<td>.28**</td>
<td>0.03</td>
</tr>
<tr>
<td>Self-Report EI: Total EI</td>
<td>-.19**</td>
<td>.32***</td>
<td>.43***</td>
<td>0.09</td>
<td>.25***</td>
</tr>
<tr>
<td>ECI – 2.0: Self-Awareness Cluster</td>
<td>-0.07</td>
<td>.47**</td>
<td>.28**</td>
<td>0</td>
<td>.30**</td>
</tr>
<tr>
<td>BarOn EQi: Total EQ</td>
<td>-.57***</td>
<td>.37***</td>
<td>.16*</td>
<td>.27***</td>
<td>.48***</td>
</tr>
<tr>
<td>TEIQue: Total EI</td>
<td>-.70***</td>
<td>.68**</td>
<td>.44**</td>
<td>-0.04</td>
<td>.34**</td>
</tr>
<tr>
<td>Big Five Inventory: E with E, N with N</td>
<td>.66***</td>
<td>.76***</td>
<td>.68***</td>
<td>.66***</td>
<td>.70***</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Purpose of the Study

The general purpose of this study intends to investigate the linkage between a sample population of employees who work under stressful work conditions and the particular characteristics that seem to affect their work performance outcomes. The characteristics explored are drawn from results of previous research studies that include
personality traits and emotional intelligence traits as influential factors affecting occupational stress outcomes. It is based on the conclusions drawn by studies that investigated which emotional intelligence traits and which personality factors were most significantly correlated to affect work performance outcomes.

After reviewing the literature on emotional intelligence and personality traits, the variables that seem to most conclusively correlate to each other are Self-Awareness on various emotional intelligence measures and Conscientiousness from the personality measures. Detailed explanations of the reason for selecting the particular assessments and scales will be conducted in Chapter Two and Chapter Three of this report.

Since the investigation in this study is intended to be exploratory, it will not include empirical or specific theoretical bases that rule out other connections; consequently, the objective of this study is neither to confirm nor disconfirm prior research. Rather, it is an attempt to ascertain how consistent emotional intelligence factors and personality criteria support the existence and perpetuation of occupational stress and burnout, and which additional effects can be suggested, assuming that a causal sequence is established.

As a result, the specific purpose of this study is to investigate the possible correlations between Conscientiousness (as part of the personality construct), Self-Awareness (as part of the emotional intelligence construct), and occupational stress outcomes in culinary chefs. Specifically, the overarching research question is to ascertain whether, and to what extent, occupational stress results in absenteeism and burnout, presuming a correlational relationship between the variables under study exists.
Significance of Study

Since the literature on emotional intelligence, personality factors, and occupational stress has been expanding at a rapid rate in the past three decades, it seems necessary to demonstrate continuous effort in defining and applying results within the fields in psychology, organizational development, and management. One of the primary impetuses for selecting a correlational study on this topic with this particular population is due to a lack of understanding of the characteristics and performance issues that adversely affect culinary chefs.

Additionally, a significant element of this research study is aimed at bringing awareness and understanding of the work related experiences of a highly neglected subgroup of working professionals in the psychological literature, those being culinary chefs. Although much has been written on the culture, environment, and experiences of chefs and culinary professionals in journals within the hotel, restaurant and tourism industries, this population represents an underrepresented, underserved and vastly ignored population in counseling psychology, or even the general field of psychology at large.

Due to the nature of this dissertation assignment, the aim is to limit this study to specific factors of emotional intelligence (represented in this study by Self-Awareness), personality factors (represented in this study by Conscientiousness), absenteeism, and burnout. In order to provide clear parameters of discussion, this study intentionally does not expand on related issues of other emotional intelligence factors (e.g. Self-Management, Social Awareness, or Relationship Management), personality factors (e.g.
Neuroticism, Extraversion, Openness to Experience, or Agreeableness), and the various related issues on stress and work performance.

Investigating the effect of Self-Awareness and Conscientiousness in occupational performance outcomes is an attempt to specifically address and potentially solve a problem, or series of problems, exhibited by culinary chefs. The intended contribution of this study is to assess, reveal, and outline items for further exploration in discussion, both in the academic arena and in practice.

The findings of the study will introduce two meaningful aspirations – the theoretical understanding and the practical application. In regards to the theoretical implication, the top-line and most consistently denoted experiences of culinary professionals will be exposed. Consequently, the relationship between Self-Awareness, Conscientiousness, absenteeism and burnout amongst these professionals will be sought and better understood. A more comprehensive and thorough understanding and application may be possible through a more in-depth study of the interactive relationship between the total scores of emotional intelligence, personality, and occupational performance outcomes, although this would be reaching beyond the purpose of this research study. The clarification of a linkage between emotional intelligence factors, personality factors, absenteeism and burnout experiences via a factor-by-factor approach may help theorists better understand the role and influence of the effect of the interaction between personality, emotional intelligence to occupational performance outcomes in general, with the intent to illuminate topics in psychology, management, and organizational behavior. In addition, the findings based on the influence of
background/demographic factors may contribute to the further understanding of the connection between any and all of these important constructs.

This research study can also be considered valuable and important as it contributes to the University of Denver’s Counseling Psychology department’s vision of expanding institutional research that influences academic progress and practice. It is the first project incorporating an emotional intelligence scale. As such, it provides the first descriptive outline of the various emotional intelligence assessments instruments utilized in research, items/factors addressing emotional intelligence characteristics, and populations used. Additionally, it is the first in utilizing workers in the hotel, restaurant and tourism industry as primary population of study within counseling psychology.

Lastly, this study contributes towards helping professionals in a very specific technical field to address emotional intelligence related information and personality related experiences into the work environment, which may affect their development and progress as professionals by placing these to personal and professional use. It contributes to leadership knowledge and literature by providing a vehicle for further researchers to address and investigate added research questions and hypotheses with the ultimate goal of understanding and increasing best practices in training and work for culinary chefs, cooks and their respective governing bodies.

Research Design

The purpose of this study is to investigate whether, and to what extent, Conscientiousness (as part of the personality construct) and Self-Awareness (as part of the emotional intelligence construct) influence the occupational stress outcomes of absenteeism and burnout in culinary chefs. Specifically, the nature of this study to
investigate the possible correlations between Self-Awareness scores within the Emotional Competency Inventory – 2.0, the Conscientiousness scores within the NEO-FFI, and how they affect occupational performance outcomes in culinary chefs, measured in numbers of days absent from work and burnout measure outcomes from the Maslach Burnout Inventory-GS.

To fulfill the goals of the study, a correlation and regression method will be used when examining the results of the surveys. The correlation method is intended to compute statistics, such as Pearson’s correlation coefficient, and to measure how to interpret the related variables. The nature of the correlation method enables the examination of demographic information pertaining to respondents’ answers along with data results from the proposed surveys.

This research study will utilize the following variables: the first independent variable consists of the results of the Self-Awareness scale of the Emotional Competency Inventory – 2.0; the second independent variable will be the results of the Conscientiousness scale of the NEO-FFI; and the dependent variables will be absenteeism (number of days absent) and burnout scores as measured by the Maslach Burnout Inventory.

Since the aim of the research is to examine the relationship between two or more variables, the research questions and derived hypotheses will directly address the relationship between the variables. Statistical Package for the Social Sciences (SPSS) correlational analysis will be used to discover the magnitude and degree of the relationship between variables. Testing hypotheses resulting from the intended research
design and research questions requires a well set-out statistical process, which will be further elaborated on in the method section inherent in Chapter Three.

**Research Questions and Hypotheses**

In this study, Conscientiousness, Self-Awareness, and absenteeism served as the independent variables, while burnout (and absenteeism) served as the dependent variable(s). The research questions and hypotheses generated for this study include:

**Research question 1**: What is the relationship between Self-Awareness and occupational stress outcomes among chefs? Null Hypothesis 1: There is no linear relationship between Self-Awareness and occupational stress outcomes among chefs.

**Hypothesis 1**: There is a significant linear relationship between Self-Awareness and occupational stress outcomes among chefs.

**Hypothesis 1a**: A significant linear relationship between Self-Awareness and burnout exists.

**Hypothesis 1b**: A significant linear relationship between Self-Awareness and absenteeism exists.

**Hypothesis 1c**: The combination of Self-Awareness and absenteeism have a significant linear relationship with burnout.

**Research question 2**: What is the relationship of Conscientiousness and occupational stress outcomes among chefs? Null Hypothesis 2: There is no linear relationship between Conscientiousness and occupational stress outcomes among chefs.

**Hypothesis 2**: There is a significant linear relationship between Conscientiousness and occupational stress outcomes among chefs.
Hypothesis 2a: A significant linear relationship between Conscientiousness and burnout exists.

Hypothesis 2b: A significant linear relationship between Conscientiousness and absenteeism exists.

Hypothesis 2c: The combination of Conscientiousness and absenteeism have a significant linear relationship with burnout.


Hypothesis 3: There is a significant linear relationship between the combination of Self-Awareness and Conscientiousness and occupational stress outcomes among chefs.

Hypothesis 3a: A significant linear relationship between the combination of Self-Awareness and Conscientiousness and burnout exists.

Hypothesis 3b: A significant linear relationship between the combination of Self-Awareness and Conscientiousness and absenteeism exists.

Hypothesis 3c: A significant linear relationship between the combination of Self-Awareness, Conscientiousness, absenteeism and burnout exists.

Definitions of Major Constructs

The primary constructs of study in this research engender considerable debate and discussion in determining their unequivocal meaning. A lack of any definite definition, however, means that other factors warranted consideration when adopting a particular
definition or definitions to be used. Such factors in this study were led by the researcher’s direction of study and research questions asked.

**Stress**: The tension that results from one’s fundamental vulnerability to the environment, to one’s own conditions, to one’s own impulses or needs, and to one’s dependence on others. It is expressed emotionally, cognitively, and behaviorally, and one's responses to stress tend to be typical reactions in similar situations determined by one's personality structure, previous experience, and coping mechanisms (Kagan, Kagan, & Watson, 1995, p. 71).

**Occupational Stress**: The negatively perceived quality in a job which, as a result of inadequate coping with sources of stress, has negative mental and physical consequences (Rees, 1997) because of a poor fit between someone’s abilities and his/her work requirements and conditions (Holmlund-Rytkönen & Strandvik, 2005). It is “a mental and physical condition which affects an individual’s productivity, effectiveness, personal health and quality of work” (Comish & Swindle, 1994, p. 26).

**Occupational Stress Outcomes**: Physiological, psychological, and environmental impacts and reactions on employed individuals or groups, which may have short-term and/or long-term consequences on an individual’s private and public life (Frese & Zapf, 1999). The occupational stress outcome variables utilized in this study include absenteeism (reflected in number of days absent from work, and burnout as measured by the results of the Maslach Burnout Inventory).

**Work Performance**: A commonly used concept in industrial and organizational psychology that describes criteria to evaluate individual and organizational outcomes and successes (Grossi & Heward, 1998). It is typically defined as actions or behaviors that are
relevant to the organization’s goals, and can be scaled (measured) in terms of each individual’s proficiency (level of contribution) (Campbell, Glasser, and Oswald, 1996).

**Absenteeism**: A phenomenon that occurs when an employee is absent or not present at work during a normally scheduled work period. The two most common individual-level measures of absenteeism are frequency and time lost indices (Chadwick-Jones, Nicholson, & Brown, 1982; Hackett & Guion, 1985).

**Burnout**: A phenomenon that occurs when individuals’ stress experiences exceed their coping resource (Maslach, 1987). In this study, it is defined and measured according to the Maslach Burnout Inventory – GS, which characterizes burnout by exhaustion, cynicism, and reduced professional efficacy within the work environment (Maslach, Jackson & Leiter, 1996).

**Culinary chef**: A designation given to a lead professional who directs and oversees the kitchen environment of a given establishment. Chef titles utilized in this study were based on kitchen leadership and experience, and included executive chefs, sous chefs, chef owners, corporate executive chefs, junior chefs and pastry chefs.

**Conscientiousness**: One of five subordinate scales of the NEO Big Five model of personality characterized by a high degree of dependability, organization, perseverance and punctuality (Goldberg, 1993). It represents individuals that demonstrate a high degree of self-discipline, dutifulness, and aim for achievement against measures or outside expectations. The trait shows a preference for planned rather than spontaneous behavior.
**Self-Awareness**: One of four competency clusters of the Emotional Competency Inventory that characterizes individuals with a high degree of accurate self-assessment, emotional awareness, self-confidence.
Chapter Two

Review of the Literature

Introduction

The theoretical intent of this research is to formulate a study that will aid in improving the predictability of culinary chefs’ experience, practice, and occupational stress outcomes. In developing this argument, the present literature review is structured as follows: First, I will briefly contextualize this study by addressing the effects of occupational stress on work performance. Secondly, I will elaborate on the occupational stress literature by defining its whereabouts, outlining its sources, stating its consequences, and connecting these to the literature on culinary chefs. Thirdly, a statement on supervisory support will be made. Fourthly, I will describe how personality factors relate to individual differences in work performance. Fifthly, I will introduce the topic of emotional intelligence by providing an overview of the literature on emotional intelligence, including its historical development, definitions, criticisms, and models. The relationship between emotional intelligence, work performance and stress will be reviewed by outlining research studies in this area, including meta-analytic studies. In the subsequent two sections, I will present a rationale that suggests that a) measures of emotional intelligence may provide incremental validity in predicting stress responses and burnout elicited by demanding tasks, and b) inclusion of absenteeism as an outcome variable is a viable measure to ascertain occupational performance. In conclusion, I will
denote the purpose of the study, along with a statement of the general research question and hypotheses to explore. Lastly, this chapter will conclude with a discussion on the topic of burnout as a measure of occupational stress outcome. Conscientiousness and Self-Awareness will be discussed in the Research Methodology chapter within the Assessments section.

**Occupational Stress and Work Performance**

One of the most researched and discussed factor of work performance is occupational stress. Over the past few decades, occupational stress has grown to become a global concern for both individuals and organizations, and its deleterious effects span throughout many factors. For years, occupational stress related expenses have totaled more than $150 billion a year and the National Institute for Occupational Safety and Health (NIOSH) has rated stress as one of the ten leading work-related diseases (Minter, 1991; Cooper, 1998; Ivancevic & Matteson, 1980). As of 2002, stress-related disability claims in the United States have risen by approximately 700% and the direct cost of resolving a single stress claim has been estimated at between $10,000 and $15,000 (Stevens, 2002). In a review of the literature, Ganster and Schraubroeck (1991) had found over 300 academic articles on occupational stress published in practitioner journals within the past decade; a number that can have, conservatively speaking, doubled since.

A review of the literature establishes a clear link between stress conditions and its effect on individuals’ occupational environment. Several authors (Hammer, Saksvik, Nytro, Torvatn, & Bayazit, 2004; Johnson & Hall, 1996; Theorell & Karasek, 1996) have indicated that individuals who experience a single or a series of stressful life events in their personal lives often require significant social adjustments and adaptations in their
work surroundings. Given the physical and psychological demands involved in coping with stressful life events, considerable research attention has been devoted to the study of the deleterious effects of stressful events on individual’s occupational performance (Pflanz & Heidel, 2003; Ivancevich & Matteson, 1980; Cooper, Dewe, & O’Driscoll, 2001; Koslowsky, 1998).

In reviewing the literature on occupational stress, Vikic and Bogdanic (2007) have summarized the following research areas conducted on occupational stress. Although their outline does not comprise a full listing of research conducted on this topic, it provides a reasonable thorough and contemporary outline of topic areas surrounding this issue. They include a) early sources of occupational stress (Cooper & Marshall, 1976), b) dealing with occupational stress (Comish & Swindle, 1994; Murphy, 1995; Rees, 1997; Shuttleworth, 2004), c) costs of occupational stress (McHugh, 1993; Hoel, Sparks, & Cooper, 2001), d) the relationship between occupational stress and concepts such as job satisfaction, job performance and organizational commitment (Sullivan & Bhagat, 1992; Blake, 1996; Vakola & Nikolaou, 2005; Chen, Silverthorne, & Hung, 2006), e) the relationship between occupational stress and employee health (Ganster & Schaubroeck, 1991), f) occupational stress in different countries (Ben-Bakr, Al-Shammari, Jefri, 1995; Kirkcaldy & Furnham, 1999; Lu, Cooper, Kao, & Zhou, 2003), g) occupational stress in different industries (Dua (1994); Sharpley, Reynolds, Acosta & Dua (1996); and Antoniou, Polychroni & Vlachakis (2006) dealt with stress in the teaching industry, while Ross (2005) and Erkutlu & Chafra (2006) dealt with stress in tourism industry), h) stress in different professions (e.g. in human resources, see Lind & Otte (1994); stress in sales, see Sager (1990) and Montgomery, Blodgett, & Barnes

Additionally, researches dealt with the relationship between various individual characteristics/circumstances and occupational stress, such as gender (Dua, 1994; Sharpley et al., 1996; Kirkcaldy & Furnham, 1999; Antoniou et al., 2006; Fotinatos-Ventouratos & Cooper, 2005; Vakola & Nikolaou, 2005), age (Sager, 1990; Dua, 1994; Ben-Bakr et al., 1995; Sharpley et al., 1996; Kirkcaldy & Furnham, 1999; Antoniou et al., 2006; Vakola & Nikolaou, 2005), educational level (Dua, 1994; Ben-Bakr et al., 1995; Kirkcaldy & Furnham, 1999; Vakola & Nikolaou, 2005), nationality/ethnic background (Dua, 1994; Ben-Bakr et al., 1995; Lu et al., 2003), marital status (Kirkcaldy & Furnham, 1999), social class (Fotinatos-Ventouratos & Cooper, 2005), hierarchical level (Dua, 1994; Kirkcaldy & Furnham, 1999), tenure and experience (Ben-Bakr et al., 1995; Moran, 1998; Kirkcaldy & Furnham, 1999), performance (Varca, 1999), management style of superiors (Lind & Otte, 1994), organization size and type of organization (Ben-Bakr et al., 1995), supervisor’s power (Erkutlu & Chafra, 2006), personality traits (Sager, 1990; Lind & Otte, 1994; Montgomery et al., 1996; Frei, Racicot, & Travagline, 1999) and productivity due to staff absenteeism (Pflanz & Heidel, 2003). In general, all of these studies have examined the relationship between workplace stressors and mental, emotional, social and physical outcomes that affects organizations economically (Kessler & Zhao, 1999; Greenberg, Stiglin, Finkelstein, and Berndt; 1993).

Still, despite the popularity of stress in the research literature, there appears to be a lack of consensus on a definition since the early utilization of the term (e.g. Alluisi,
(1982; Beehr & Newman, 1978; Cofer & Appley, 1964; Hogan & Hogan, 1996; Janis & Leventhal, 1968; McGrath, 1976; Schuler, 1980; Ivancevich, Matteson, Freedman, & Phillips, 1990). For the purpose of conceptualizing stress in this paper, I will adopt the definition and description used by Kagan, Kagan, & Watson (1995). These authors describe stress as “the tension that results from one’s fundamental vulnerability to the environment, to one’s own conditions, to one’s own impulses or needs, and to one’s dependence on others…Stress is expressed emotionally, cognitively, and behaviorally, and one's responses to stress tend to be typical reactions in similar situations determined by one's personality structure, previous experience, and coping mechanisms” (p.71). According to them, excessive levels of stress are often more readily identified by others rather than by those who experience it. As such, they denote job-related stress as “the emotional, mental, and behavioral reaction to vulnerability caused by elements in the job environment.”

In today’s workforce, employees experience stress from a variety of sources, many of which relate to adjustment to a vast array of changes that occur in the contemporary workplace. Some examples of these changes include the speed and sophistication of technological changes, re-engineering, merging companies, and staff reductions, such as downsizing (Moore, Sikora, Grunberg & Grunberg, 2007; Sulsky & Keown, 1998; Donald et al., 2005).

**Causes of occupational stress**

A holistic approach to the study of stress and work performance includes an understanding of the situational and personal characteristics contributing to the outcomes. Psychological components of this process have been conceptualized under the general
rubric of stress and its impact. Interest in the effects of stress on individuals has been growing since Seyle’s (1956) formative work in the late 1950s. Current conceptualizations of stress recognize it as a complex process involving an individual’s reaction to an exacting environmental event (Lazarus & Falkman, 1984). This process involves three discrete components: an environmental event (e.g., “that was stressful”), a negative cognitive appraisal by the individual that the event requires coping and/or adaptation (e.g., “this is too stressful”), and an immediate physical or psychological response (e.g., “I am stressed out”). Research has attempted to elucidate the process by which encounters with stress result in deleterious or adaptive outcomes. These studies have focused on the nature of the stressor, its magnitude, recency, cumulative effect, perceived meaning and impact (Dohrenwend & Dohrenwend, 1981; DeLongis, Lazarus & Folkman, 1988; Lazarus & Folkman, 1984).

Research has also considered factors which moderate or mediate the effects of stress. These have included environmental supports (Barrera, 1986; Cauce, Felner & Primavery, 1982) and individual difference variables that persons bring to bear when they encounter stress, such as coping strategies, personality characteristics, and previous experience (Folkman, 1984; Folkman & Lazarus, 1986; Kobassa, 1979). As part of this study, this research project intends to further elucidate the specific personality characteristics that affect culinary and managers’ work performance.

*Environmental Stressors*

As briefly mentioned in the previous section, the first component that can lead to stress is the occurrence of an environmental event, the environmental stressor. Environmental stressors are external factors that require a physiological and
psychological adaptation from individuals experiencing them. They range from minimally disruptive events, such as weather, pollution, noise, traffic, to highly disruptive occurrences, such as death of a significant other, divorce, or natural disasters. According to Davis, Schoorman, Mayer & Tan (2000), each and any of these environmental precipitants can cause employees to have a decline in work performance, based on several additional factors, which are described in this review.

Wilkinson (1969), in an early study of environmental stress, highlights six factors that appear to influence the effects of environmental stress upon performance. These consist of a) length of the working period or duration of the task at hand, b) the ability to acclimate and/or adapt to the stress and task, c) level of incentive for the task, d) the type of work needed to be performed, e) the aspect of the performance perceived as important, meaning, the value attributed to the task performed, and f) the presence and magnitude of multiple stressors.

*Cognitive Stressors*

Thought patterns, meaning individuals’ cognitions and perceptions, address how persons interpret experiences and predictions for the future. Davis et al. (200) claim that depending on the circumstances, thought patterns can negatively influence such individuals, and, therefore, impacting individuals’ work performance. An example in this research states, “A person might interpret a sour look from a co-worker as meaning “you are not doing your job adequately,” which can cause anxiety that in turn can affect work performance. However, if this person interprets their co-worker’s look as fatigue or a personal problem, this will not be as anxiety provoking.” Employers implement
employee wellness programs to help the employee manage stress and optimize work performance. Few outcome studies actually explore this concept.

**Physiological Stressors**

Examples of physiological factors that can create stressors for individuals include aging, illness, injuries, menopause, inadequate sleep, lack of exercise, and poor nutrition (Davis et al., 2000), consequently, affecting employees at work. Employers in various work environments have implemented wellness programs to assist employees in stress management and overall health with at least part of the goal being to maintain or improve work performance. Few outcome studies actually explore this concept, which renders it difficult to assess and predict effectiveness of these programs.

**Social Stressors**

Several authors (Davis et al., 2000; Patterson, West, Lawthorn, & Nickell, 1997) have highlighted incidents relating to individuals’ external environment that can contribute stress, here called social stress. Some of these stressors include financial problems, job demands, disagreements, demands for time and attention, deadlines, grief and loss issues, presenteeism (Shortell & Kaluzny, 2000; Burke, 2004). Although these types of stressors are not directly attributed to the workplace itself, they each have been described as potentially directly impacting work performance. For this reason, the questionnaire utilized in this study inquires about perceived experiences of stress directly from the participating chefs.

**Occupational Stress in Culinary Chefs**

The literature on occupational stress states that the experience of stress depends on an appraisal of the situation and on the drawn on coping strategies of individuals
(Murray-Gibbons & Gibbons, 2007). Increasing evidence over the past 15-20 years has documented the marked occupational stress experienced by culinary chefs within the hospitality and leisure industry in general, particularly in comparison to those in other occupational groups. However, a review of the literature lacks the identification of specific causes that lead to these strains (Young & Corsun, 2010). Aside from descriptions about how a large proportion of hospitality employees work overtime - with a higher than average number of people working in excess of 65 hours a week, for example (Smith and Carroll, 2006), with lower salaries and wages and higher work-loads (Huang, 2007), and experiences of role conflict, role ambiguity, interpersonal conflict, and general work constraints (Young & Corsun, 2010), there is a clear lack in the literature that specifically outlines the contributing factors leading to occupational stress. In order to locate a more comprehensive pool of articles, the author expanded her search to incorporate international articles. Herein, a slightly larger, or at least, an added array of publications on this topic and industry could be identified.

A study on culinary workers in Taiwan conducted by Hsu-I Huang in 2007 examined the relationship between locus of control, demographic variables, job satisfaction, work stress, and turnover intention. The results indicated that male chefs had a higher degree of internal locus of control than their female counterparts. Internal locus of control was significantly and positively correlated with job satisfaction and length of tenure in kitchens, although significantly and negatively correlated with occupational stress and turnover intentions. Additionally, it was concluded that job satisfaction and occupational stress were found to have significant differences depending on employee demographics.
In a survey conducted among chefs within the UK, Johns and Menzel (1999) describe the widespread physical violence and psychological abuse experienced in kitchens. Among those are kicking, pushing, throwing objects, and deliberate burning with hot food or hot equipment. The discussion of this study drew a link between these actions and the stressed work environment, both referencing the physical conditions, such as the crowded, hot and noise environment, as well as the psychological conditions, such as the pressure to conform to the policies, strict hierarchies of authority, and norms in the kitchen. The aggressive behaviors exhibited by head chefs are attributed to artistry, meaning that violent actions are born out of the artistry and creativity in which the agreement exists that aggression serves to motivate junior chefs and other kitchen staff. This argument was also reiterated in a study conducted by Bourdain (2004) in which chefs claimed that “giving and receiving abuse is part of the socialization process that creates the ‘hardiness’ needed to function in a commercial kitchen or restaurant” (p. 649).

Authors Bloisi and Hoel (2008) summarized the issue of abusive work practices among chefs in Northern Ireland. It examined the possible causes of bullying and abusive behaviors in the industry and argues that personal characteristics, culture and socialization, and the transient nature of the industry contribute to the tolerance for abusive behaviors. Conclusions drawn in this study suggests that abuse may be an expected part of the culture of commercial kitchens, which is supported by historical and contemporary social structures within education and training systems in this industry.

One manifestation of the adverse effects of occupational stress present in the hospitality industry, including chefs, is burnout. Defined as “a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal achievement that can
occur among individuals who work with other people” (Maslach, 1993, p.26), it recognizes the potential consequences of stressful working environments within the service industry. In a study conducted by Krone et al. in 1988, the researchers administered the Maslach Burnout Inventory (MBI) to over 200 food service managers and found that 30% reported high emotional exhaustion, 24% high depersonalization and 50% a low level of personal achievement. The results of this study exceed the findings in the normative data published by Maslach and Jackson in 1986. Additionally, Krone, Tabacchi & Farber (1989) found that single women suffered most, and married participants suffered least, and while reported stress was still evident, this finding seems to support the mediating effect of social support within these conditions.

Rowley and Purcell (2001) conducted a study in the UK that examined occupational stress and burnout within members of the hospitality industry. Of all the occupational groups surveyed, chefs were amongst the highest in burnout. The most common coping responses found included increased consumption of foods high in sugars, fats and caffeine and increased alcohol intake and other drug use. Other characteristics included fatigue, high emotional exhaustion and low personal achievement. Similar findings were reported in studies by Ledgerwood, Crotts & Everett (1998), Buick and Thomas (2001) and Conte, Ringenbach, Moran & Landy (2001).

Within the same article, the researchers discuss the personality characteristics necessary to work in kitchen environments. Employers recruit individuals with appropriate personality traits, and attitudes suited to work in the industry, such as enthusiasm, responsibility, commitment, stamina, flexibility, and the willingness to learn to fit with the ethos of the establishment. These characteristics outweigh technical skills...
and prior experience along with other soft or generic skills such as communication, problem-solving and self-confidence.

These findings seem to imply that working in kitchen environments demand a large amount of people and self-management attributes. Coping with the nature of the work in a commercial kitchen, poor management on supervisor’s side, feelings of being out of control, compounded by a sense of lack of charge and control can all be attributed to characteristics measured by emotional intelligence factors.

**Supervisor Support**

The direct reporting relationship, with its direct impact on day-to-day priorities, accommodations, and rewards, is likely to be a crucial and influential relationship in these settings (Shanock & Eisenberger, 2006). The terms supervisor and manager are occasionally used interchangeably in the research (e.g., Thompson & Pruttas, 2005), but for the purposes of this study the term *supervisor* was used to refer to those individuals to whom chefs directly report. Although chefs may have indirect reporting relationships with restaurant managers and restaurant owners, it is common for chefs to succumb to strict hierarchal structures in their organizations.

In the hospitality industry every occupational aspect of the work depends on the physical labor of many hourly (or non-managerial) workers: people who cook, serve tables, mix drinks, wash dishes, check guest in and out, clean rooms, etc. Few industries are as dependent for success on the performance of hourly workers. How well these workers produce and serve depends largely on how well they are managed. Those people who supervise these workers hold the keys to the success of the operation. In the hospitality industry, a supervisor is a person who manages the employees who make the
products and perform the service. Those supervisors have obligations to the owner, the guests, and the employees alike.

Even though it is beyond the scope of this research to evaluate supervisor support in culinary chefs, items assessing the existence and extent of supervisory support within the kitchen environment was inquired. The three questions specific to this inquiry were “generally, do you feel supported by your superior”, “to what extent do you perceive your superior values your contributions”, and “to what extent do you perceive your superior cares about your well-being”? Herein, supervisor is replaced with superior in order to adhere to a contextual and kitchen specific label.

**Personality**

**Personality and Stress Response**

Personality is an important determinant of health and psychological outcomes. Although this connection is still not fully understood, research clearly shows that stressful experiences and how people cope with them play an important explanatory role (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Contrada, Leventhal, & O’Leary, 1990; Friedmann, 1990). Grant and Langan-Fox’s (2007) review of several stress models indicated the importance of person’s personality in the individual response to stress.

The Transactional Stress Model (Grant & Langan-Fox, 2007) proposed that certain people create more frequent, prolonged, or severe stress through their own cognition and behavior as a consequence of personality. In the Differential Exposure-Reactivity Model (Grant & Langan-Fox, 2007) personality is theorized to affect exposure and/or reactivity to stress. The Moderated Effect Model (Grant & Langan-Fox, 2007) proposed that the relationship between stress and strain is more (or less) potent for people...
with certain traits than for other people, indicating that the strength and effect of stress on strain is dependent on personality. This suggests that personality may alter or moderate the effect of stress on strain exacerbating its effect or alternately decreasing or buffering its effect on the individual (Grant & Langan-Fox, 2007).

Bolger and Zuckerman (1995) reported that personality can affect reactivity because in the presence of stressors, personality can affect coping choice, coping effectiveness, or both. There is an abundance of research literature on the role of personality in the stress process of major life events. Gunthert, Cohen, and Armeli (1999) reported that little is known about daily functioning and the impact of personality on functioning. Literature suggests that personal characteristics may contribute to the emergence of psychological well-being (Houkes, Janssen, de Jonge, & Bakker, 2003; Luthans & Youssef, 2007).

Bolger and Zuckerman’s (1995) research on psychology students (N=94) indicated that a person’s reaction was more important than the exposure to a stressor or conflict. Their research analyzed daily diaries of the students to identify links between personality traits, daily interpersonal conflicts, coping choices, and distress. As individuals are faced with stress, their actions are shaped by their personality style; alleviating the stress may cause further symptoms that eventually lead to the burnout syndrome. As individuals start to experience burnout they may blame themselves for feeling overwhelmed, causing greater tension, which may also cause the setting of higher standards and goals than the ones that have already been set and not met. Siebert and Siebert (2007) indicated that the professional role produces a paradigm that causes the professional to be unable to break out of the role as caregiver and have great difficulty in
accepting care for their distress. This further precipitates the individual into the burnout syndrome. When workers are not able to set realistic goals for them and their agency, they will become stressed and overwhelmed. If this happens and the individuals do not have healthy lifestyles and positive ways to cope, they will become highly susceptible targets for the burnout syndrome (van Dierendonck, Garssen, & Visser, 2005).

**Personality and Work Performance**

Personality can be defined in terms of factors that explain behavior, temperaments, or dispositions (Hogan, 1991). “Personality is something employed in a broader sense, in conventional psychometric terminology, “personality tests” are instruments for the measurement of emotions, motivational, interpersonal, and attitudinal characteristics, as distinguished from abilities (Anastasi, 1988, p. 523). The underlying assumption in this statement presumes a degree of stability and predictability that is reasonably consistent across situations. From the personality perspective, it is not what a person does but how they do it that determines effective performance. Possession of certain personality characteristics are therefore inferred from the demonstration of those behaviors. “Personality attributions reflect judgments about others’ behavior averaged over many context and times; they are patterns. When properly assessed, these patterns are consistent and, over time, people differ from one another in ways that are important to employers” (Hogan, Hogan & Roberts, 1996, p. 473).

Personality variables have been hypothesized to affect occupational stress in many different ways, including indirectly through stressors (Ganster & Schaubroeck, 1991) mentioned above. Personality can affect the way people interpret events and the way by which they react differently because of these different appraisals. Similarly,
people can subsequently enact more stressful environments for themselves based on individual attitudes and beliefs. Individuals with particular personality characteristics often create more objective stress for themselves than do other individuals by increasing their self-imposed workload volume during simple tasks (Edwards & Cooper, 1990).

Personality is often measured through psychological inventories, the majority of which are comprised of essentially the same five dimensions and may contain additional scales that may measure other factors. Profiles derived from well-constructed measures of normal personality have been found to be stable over long periods of time (Hogan, et al. 1996; Barrick & Mount, 1993). Personality characteristics studied over a variety of longitudinal studies that have test-retest reliabilities ranging from .34 to .83 (Costa & McCrae, 1988; Conley, 1984; Helson & Moane, 1987). From these studies it can be inferred that personality changes are gradual; thus, assessment information can be useful in predicting potential work performance.

While similarities between individuals exist, people also possess different combinations of characteristics that differentiate themselves from one another. Thus, personality can be considered to be a unique and enduring “cluster” of individual characteristics. Because the domains of personality and occupational performance are multifaceted, one-dimensional criteria do not serve as adequate measures of managerial effectiveness and should therefore be combined with other measures to attain a more comprehensive representation (Goldberg, 1993). There is increasing recognition that the many personality traits identified can be organized into five general domains. These domains have been identified as: Neuroticism, Extroversion, Openness, Agreeableness,
and Conscientiousness. In turn, each domain includes a number of subscales. These subscales, or facets scales, are described in Table 2.

Table 2
*Theoretical and Empirical Clustering of Personality Characteristics High and Low in Factors for the Big Five Personality Inventory*

<table>
<thead>
<tr>
<th>High in Factor</th>
<th>Low in Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional Stability (Neuroticism)</strong></td>
<td></td>
</tr>
<tr>
<td>Calm</td>
<td>Anxious</td>
</tr>
<tr>
<td>Resistant to stress</td>
<td>Depressed</td>
</tr>
<tr>
<td>Secure</td>
<td>Insecure</td>
</tr>
<tr>
<td>Stable</td>
<td>Susceptible to stress</td>
</tr>
<tr>
<td><strong>Conscientiousness</strong></td>
<td></td>
</tr>
<tr>
<td>Dependable</td>
<td>Unpredictable</td>
</tr>
<tr>
<td>Organized</td>
<td>Disorganized</td>
</tr>
<tr>
<td>Persevering</td>
<td>Easily discouraged</td>
</tr>
<tr>
<td>Punctual</td>
<td>Unreliable</td>
</tr>
<tr>
<td><strong>Agreeableness</strong></td>
<td></td>
</tr>
<tr>
<td>Amiable</td>
<td>Unfriendly</td>
</tr>
<tr>
<td>Cooperative</td>
<td>Contrary</td>
</tr>
<tr>
<td>Flexible</td>
<td>Aloof</td>
</tr>
<tr>
<td>Trusting</td>
<td>Suspicious</td>
</tr>
<tr>
<td><strong>Extraversion</strong></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>Apprehensive</td>
</tr>
<tr>
<td>Assertive</td>
<td>Shy</td>
</tr>
<tr>
<td>Excitable</td>
<td>Dull</td>
</tr>
<tr>
<td>Sociable</td>
<td>Timid</td>
</tr>
<tr>
<td><strong>Openness to Experience</strong></td>
<td></td>
</tr>
<tr>
<td>Creative</td>
<td>Routine-oriented</td>
</tr>
<tr>
<td>Curious</td>
<td>Bored</td>
</tr>
<tr>
<td>Insightful</td>
<td>Uninterested</td>
</tr>
<tr>
<td>Intellectual</td>
<td>Intolerant</td>
</tr>
</tbody>
</table>

These personality factors, with their inherent subscale or facets scales when formal measurements are included, may also consist of personal strategies individuals have developed to function effectively in their world. These interpersonal characteristics are thought to drive social behavior and have served as the source of the “big-five”
personality factors (Goldberg, 1993; McCrae & Costa, 1995; Hogan, Hogan & Roberts, 1996). The five factor model of personality was originally identified in factor analyses of trait-descriptive adjectives and attributions from peer observers describing behaviors or people. These descriptions were factor analyzed to identify the structure of personality traits or the five factors (Cattell, 1946). Since 1985, research with the NEO has demonstrated the same five factors can account for the major characteristics in personality questionnaires designed to measure Jungian personality types, Marray’s needs, and the DSM-III-R personality disorders.

Competencies, according to McClelland (1973), can be defined as a combination of knowledge, skills, self-concepts, traits and underlying motives that can be measured in terms of demonstrated behaviors. At a deeper level of understanding behavior are theories that propose certain personality characteristics are associated with effective performance. Such personality variables can broadly range in number and definition.

Barrick and Mount (1991) summarized the empirical resource on the predictive validity of the big five personality traits for work performance, and reached the following conclusions. They found that the big-five personality characteristic of Conscientiousness ($r=.22$) was the best predictor of work performance across a large range of job types. The next strongest correlation was for extroversion, with an average across occupations of $r=.13$. The estimated true correlations for the remaining personality measures with work performance in their study were in a range between .03 and .08. These results seem to indicate that Conscientiousness as the best and only significant predictor of work performance across occupations. This article has been widely cited and is responsible for
renewed interest in the predictive validity of big-five personality traits for work performance.

An additional large-scale meta-analysis performed testing the relationship between big-five personality traits and work performance was authored by Tett, Jackson, and Rothstein (1991), which was published just months post the work of Barrick and Mount (1991). This research is cited less often, possibly due to its more ambiguous findings. The findings suggest that agreeableness (r=.33, openness (r=.27), emotional stability (r=-.22), Conscientiousness (r=.18), and extroversion (r=.15) all had small to moderate positive correlations with work performance.

The differing results are explained as a demonstrated lack in rigor on the part of the Tett et al. study, as it included unpublished dissertations along with published works in their analysis, and as it included interest and value inventories, which may not appropriately measure personality traits.

A third major meta-analysis was performed by Hurtz and Donovan (2000) that further refined the earlier works by Barrick and Mount (1993). In this study, the authors found significant relationships between overall performance and both Conscientiousness (r=.22) and emotional stability (r=.14). Following these two factors, agreeableness resulted in a true-score correlation of .13. When categorized by job type, Conscientiousness still resulted in the best predictor of work performance in all four job types, including sales, customer service, management, and skilled and semi-skilled jobs. Categorizing by performance type, Hurtz and Donovan (2000) found that Conscientiousness was the best predictor of task performance (r=.16) and agreeableness (r=.20) was the best predictor of contextual performance.
In a study attempting to evaluate the generalizability of the predictive validity of personality traits to cultures outside of North America, Salgado (1997) performed a meta-analysis which selected studies in European samples. Utilizing the results of the major previous studies (Barrick & Mount, 1991; Hough, Eaton, Dunnette, Kamp & McCloy, 1990; Tett et al., 1991), the author hypothesized that Conscientiousness and emotional stability would be the best predictors of work performance. His hypotheses were supported with results indicating corrected correlations of .25 between Conscientiousness and work performance, and a corrected correlation of .19 between emotional stability and work performance.

The studies cited above seem to provide a fairly substantial empirical basis for the use of personality measures as predictors of work performance. In spite of this relatively substantial support, many personality researcher and researchers in organizational behavior continue to explore situational factors that may moderate the personality trait – work performance relationship to include autonomy (Barrick & Mount, 1993), job type (Mount, Barrick and Stewart, 1998), performance monitoring (Robie & Ryan, 1999), accountability (Frink and Ferris, 1999), and perceptions of organizational politics (Hochwarter, Witt, and Kacmar, 2000).

**Emotional Intelligence**

In an article published in the American Psychologist in 2008, Mayer, Salovey and Caruso discuss the legitimacy of emotional intelligence as an independent construct from general intelligence. In spite of much debate over the past 20 years, researchers have most recently recognized emotional intelligence as a vital component of successful performance, and as a consequence, it is becoming increasingly relevant in studies
addressing adjustment to the fast-paced changes associated with globalization, increased technology, and turbulent markets (Goleman, 1998). This section will address the historical background of emotional intelligence, along with researchers’ attempts to define it. Presently, various models of emotional intelligence exist, some of which will be outlined in this text as well. Lastly, an outline of the most prevalent research conducted in the most recent years will be provided, focusing on studies directly relating to emotional intelligence and work performance outcomes.

**Emotional Intelligence as a Construct: Historical Background**

Emotional intelligence is not a new concept. Previously referred to as “social intelligence,” psychologists have been aware of the social-emotional complexities of individuals for over 80 years. In 1920, Thorndike, a pioneer in the contemporary scientific community for his formulations on assessments of intelligence, identified social intelligence as a separate form of intelligence, defining it as “the ability to understand men and women, boys and girls—to act wisely in human relations” (p. 228). However, academic interest in social intelligence waned in the 1960s due to difficulties with its definition and measures (Salovey & Mayer, 1989). Research on emotional intelligence did not reemerge until the 1980s when Sternberg, Conway, Ketron, and Bernstein (1981) examined how people described an intelligent person in terms associated with emotional intelligence.

It was Daniel Goleman, who brought the concept of emotional intelligence to the general public’s attention in 1995 through his best-selling book Emotional Intelligence (Mayer, Salovey, & Caruso, 2000). He attributes the origin of the latest resurgence in interest in this matter to Gardner’s book “Frames of Mind” (1983), which states that
success in life is attributable to more than the “traditional” types of intelligence. Specifically, he stated that not all intelligent people, classically defined as those who are “cognitively swift” and “deductively accurate,” are successful in life, and many with IQs in the middle to normal range can - and do - succeed to a high degree. In the following years, researchers have found that there are differing psychological traits, not solely attributable to cognitive intelligence, that are predictive of success.

Eventually, proponents of non-cognitive intelligences urged the social and research communities to consider inter- and intrapersonal intelligences. In the aforementioned book, Goleman (1995) compellingly emphasized the importance of emotional intelligence, stressing it as the ability that provides a significant competitive advantage. The business community in particular was enthusiastic about the delineation of the constructs (Goleman, 1998), as evidenced by the attention paid to emotional intelligence in business magazines, such as the Harvard Business Review, and various social journals, and research reviews. Zeidner, Mathhews & Roberts (2004) emphasized this by this summarizing statement: “More and more companies are realizing that emotional intelligence skills may be a vital component of any organization’s management philosophy and subsequent success.” (p.379)

Goleman’s (1998) research on emotional intelligence has roots in the competency work of McClelland and his colleagues. In this work, emotional intelligence is identified as a) the capacity to recognize one’s personal feelings and those of others, b) the capacity to differentiate between them and c) the ability to apply this information to guide personal thoughts and behaviors. The assumption is that emotional intelligence is comprised of competencies that are distinct from, but complementary to, the cognitive
ability measured by IQ. Preceding Goleman’s ground-breaking book, educators and researchers tended to focus primarily and, at times, exclusively on cognitive skills, devoting less attention to social and emotional competencies in their studied populations. As such, success was most commonly attributed to intelligence and cognitive abilities. Although Goleman has received primary attention for emotional intelligence, he is not the inceptor or sole representative of this construct. The following is a summarization of several researchers’ formulations and applications of emotional intelligence prior to and preceding Goleman’s work.

**Constructs of Emotional Intelligence**

Emotional intelligence, as an established construct, is fairly new. As stated previously, its root is found in social intelligence, a concept attributed to Thorndike (Landy, 2005; Law, Wong, & Song, 2004). According to several researchers, this conceptual lineage implies that the most appropriate view of emotional intelligence is to consider it a form of intelligence (Neubauer & Freudenthaler, 2005; Salovey & Grewel, 2005; Salovey & Mayer, 1990).

In fact, Salovey and Mayer (1990) proposed that particularly the ability conceptualization within emotional intelligence meets the criteria for considering it a form of intelligence. In their research, they divide its definition into four specific branches. The first branch addresses perceptions, which is the ability to perceive one’s own and other’s emotions, particularly in faces, pictures, and voices. The second branch addresses people’s ability to control emotions while, simultaneously, allowing other cognitive processes to occur. The following branch involves understanding emotions, which entails the ability to accurately interpret emotions and to understand how various
emotional responses and reactions are interrelated. Finally, the fourth branch deals with
managing emotions and is comprised of regulating one’s own and other’s emotions
(Table 3).

Table 3
The Four Branch Model of Emotional Intelligence (Mayer & Solovey, 1997)

<table>
<thead>
<tr>
<th>Emotional Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing emotions so as to attain specific goals</td>
</tr>
<tr>
<td>Understanding emotions, emotional language, and the signals conveyed by emotions</td>
</tr>
<tr>
<td>Using emotions to facilitate thinking</td>
</tr>
<tr>
<td>Perceiving emotions accurately in oneself and others</td>
</tr>
</tbody>
</table>

Note. Each branch describes a set of skills that make up overall emotional intelligence. Each branch has its own developmental trajectory, proceeding from relatively easy skills to more sophisticated ones. For example, Perceiving Emotions typically begins with the ability to perceive basic emotions in faces and voice tones and may progress to the accurate perception of emotional blends and to the detection of emotional microexpressions in the face.

Mayer et al. (2004) define emotional intelligence as “the abilities to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth.” Law et al. (2004) therefore conclude that because the ability conceptualization of emotional intelligence addresses emotional intelligence as a set of “abilities,” or “can do” versus “will do” aspects of behavior, emotional intelligence is indeed a form of intelligence.

Initially, Goleman (1995) defined emotional intelligence as “an array of emotional, personal, and social abilities that affect one’s overall ability to effectively cope with daily demands and pressures; this ability is apparently based on a core capacity to be aware of, understand, control, and express emotions effectively “ (Bar-On, 2000,
After controversy around this original definition, Goleman (1998, 2001) emphasized the distinction between emotional intelligence and emotional competencies, defining emotional intelligence as the potential to learn and emotional competencies as the degree of mastery of a skill, such as conflict management (Goleman, 2001). Goleman (2001) defined Self-Awareness, Self-Management, Social Awareness, and Relationship Management as the underlying emotional intelligence abilities, and factors such as building bonds as competencies. One of the benefits of this distinction was that what Goleman included in his model as underlying abilities could then fit into the most basic model of emotional intelligence, resulting in some level of agreement between the emotional intelligence experts on the basic elements of emotional intelligence.

Bar-On et al. (2006) encapsulated that from all of the existing definitions - Darwin until the present - several key components comprise emotional intelligence: the ability to understand and express oneself; understand and relate with others; manage and control emotions; change, adapt, and solve problems of a personal and interpersonal nature; and finally the ability to generate positive mood and be self-motivated. The diversity of these key components seems to make it easy to understand how researchers disagree on its pertaining constructs along with its definition.

Although publications in the emotional intelligence research may reflect the continuing difficulties in defining emotional intelligence, there is, at a minimum, general consensus that emotional intelligence of its managers is indeed a crucial part of an organization’s success (Zeidner, Matthews, & Roberts, 2004). A delineation of some of the most utilized models of emotional intelligence developed by the most significant
theorists is described below (Bar-On, 2000; Boyatzis, Goleman, & Rhee, 2000; and Mayer et al., 2000).

**Criticisms of Emotional Intelligence**

As can be seen from the divergence in the definitions of emotional intelligence, there is still disagreement regarding the characterization and designation of emotional intelligence. Emotional intelligence critics, such as Zeidner et al. (2004), note that the term emotional intelligence “often appears all encompassing and protean, such that emotional intelligence is left bereft of conceptual meaning” (p. 373). Despite the interest and publicity surrounding emotional intelligence, there is little research confirming that emotional intelligence is a separate construct (Zeidner et al., 2004). Based on a study showing high correlations of the BarOn EQ-i to the Big Five personality factors, Roberts, Zeidner, and Matthews (2001) along with Locke (2005) question whether emotional intelligence measures factors distinctively different from those that measure personality. However, Van Rooy and Viswesvaran (2004) found that emotional intelligence, as measured by the BarOn EQ-i, added significant validity to the Big Five, whereas the Big Five did not add much incremental validity to emotional intelligence.

There are also some difficulties with emotional intelligence assessments. In a meta-analysis of the predictors specifically relating to emotional intelligence, Van Rooy and Viswesvaran (2004) criticized the current measures of emotional intelligence for the lack of evidence supporting their psychometric measurement properties. Additionally, using self-report to evaluate emotional intelligence relies by necessity on a level of self-understanding on individuals taking such assessment. Particularly in emotional intelligence assessments, Self-Awareness (and, therefore, the inherent ability to self-
evaluate) is the most relevant item being measured (Roberts et al., 2001). Researchers have questioned the validity of the outcomes of these psychometric results in those assessments, primarily for these reasons.

In the recent article by Mayer et al. (2008), the authors defend emotional intelligence against the rise of criticisms surfacing from the researchers who claim that emotional intelligence tries to “cover too many things, too many traits, too many different concepts” (Landy, 2005; Murphy & Sideman, 2006; Zeidner, Roberts, & Matthews, 2004, Gohm, 2004, Mayer, 2006). Daus and Ashkanasy (2003) extended their argument by stating that “these models have done more harm than good regarding establishing emotional intelligence as a legitimate, empirical construct with incremental validity potential” (pp.69-70).

Mayer, Salovey, and Caruso (2008) assert the notion that emotional intelligence is a valid construct that distinguishes itself from general intelligence by assessing individuals’ abilities “to engage in sophisticated information processing about one’s own and others’ emotions and the ability to use this information as a guide to thinking and behavior” (p. 503). In their use of this term, “emotional intelligence is an instance of a standard intelligence that can enrich the discussion of human capacities” (p. 503). Along similar intent, the purpose of this research is to further and clarify elements of emotional intelligence, when combined with other factors, to enhance the understanding of high-performing workers in stressful environments.

**Models of Emotional Intelligence**

The most recent models of emotional intelligence (Mayer, Salovey, and Caruso, 2000; Bar-On, 2000; and Goleman as described by Boyatzis et al., 2000) all include the
foundational elements of emotional intelligence, such as self-awareness, emotional understanding, and emotion management. They differ in their focus and purpose.

With an emphasis on well-being, Bar-On’s (2000) mixed model of emotional intelligence (Mayer et al., 2000) is broad, incorporating “an array of emotional, personal, and social abilities that affect one’s overall ability to effectively cope with daily demands and pressures. This ability is apparently based on a core capacity to be aware of, understand, control, and express emotions effectively” (Bar-On, 2000, pp. 373-374). In order to more effectively measure emotional intelligence, Bar-On drew from Wechsler’s non-intellective factors of intelligence (Wechsler, 1958) and Gardner’s (1983) multiple intelligence factors to develop the Emotional Quotient Inventory, abbreviated as EQ-i (Bar-On, 2004). The EQ-i includes 15 factorial subscales, with 5 composite scales measuring intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood (Bar-On, 2004), plus four validity indicators. The composite and subscales of the EQ-i are shown in Table 3. Due to the extensive research on the validity and reliability of the EQ-i, the EQ-i was used as the preferred measure of emotional intelligence for this study. Consequently, this model is described in more detail in the Methods chapter of this paper.

Goleman’s model of emotional intelligence focuses on the factors outside of traditional intelligence that affect performance in life and work (Goleman, 2001). Accordingly, Boyatzis et al. (2000) formulated and defined emotional intelligence as “when a person demonstrates the competencies that constitute Self-Awareness, Self-Management, Social Awareness, and Social Skills at appropriate times and ways in sufficient frequency to be effective in the situation” (p. 344). Consequently, these authors
developed the Emotional Competence Inventory, abbreviated ECI - 2.0. The ECI - 2.0 is a 110-item instrument assessing emotional competency, defined as the ability to recognize and manage one’s personal emotions, those of others, along with the ability to motivate others. The four clusters of competencies or skills measured by the ECI - 2.0 are (a) Self-Awareness, (b) Self-Management, (c) Social Awareness, and (d) Social Skills. Each cluster is composed of an additional three to eight specific competencies that are considered to make up the more general competency. The 20 competencies of this model are included in Table 4.
Table 4
*Theoretical and Empirical Clustering of the Competencies in the ECI Model*

<table>
<thead>
<tr>
<th>Theoretical Clustering</th>
<th>Theoretical Clustering</th>
<th>Current Clustering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-Awareness Cluster:</strong></td>
<td><strong>Self-Awareness Cluster:</strong></td>
<td><strong>Self-Awareness Cluster:</strong></td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>Emotional Self-Awareness</td>
<td>Emotional Self-Awareness</td>
</tr>
<tr>
<td>Accurate Self-Assessment</td>
<td>Accurate Self-Assessment</td>
<td>Accurate Self-Assessment</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>Conscientiousness</td>
<td>Self-Confidence</td>
</tr>
<tr>
<td><strong>Self-Regulation Cluster:</strong></td>
<td><strong>Self-Management Cluster:</strong></td>
<td><strong>Self-Management Cluster:</strong></td>
</tr>
<tr>
<td>Self-Control</td>
<td>Self-Control</td>
<td>Self-Control</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>Trustworthiness</td>
<td>Trustworthiness</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>Conscientiousness</td>
<td>Conscientiousness</td>
</tr>
<tr>
<td>Adaptability</td>
<td>Adaptability</td>
<td>Adaptability</td>
</tr>
<tr>
<td>Innovation</td>
<td>Change Catalyst</td>
<td></td>
</tr>
<tr>
<td><strong>Self-Motivation Cluster:</strong></td>
<td><strong>Self-Motivation Cluster:</strong></td>
<td><strong>Self-Motivation Cluster:</strong></td>
</tr>
<tr>
<td>Achievement Orientation</td>
<td>Achievement Orientation</td>
<td>Achievement Orientation</td>
</tr>
<tr>
<td>Commitment</td>
<td>Initiative</td>
<td>Initiative</td>
</tr>
<tr>
<td>Initiative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimism</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Empathy Cluster:</strong></td>
<td><strong>Social Skills Cluster:</strong></td>
<td><strong>Social Awareness Cluster:</strong></td>
</tr>
<tr>
<td>Empathy</td>
<td>Empathy</td>
<td>Empathy</td>
</tr>
<tr>
<td>Organizational Awareness</td>
<td>Organizational Awareness</td>
<td>Organizational Awareness</td>
</tr>
<tr>
<td>Service Orientation</td>
<td>Service Orientation</td>
<td>Service Orientation</td>
</tr>
<tr>
<td>Developing Others</td>
<td>Developing Others</td>
<td>Developing Others</td>
</tr>
<tr>
<td>Leveraging Diversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Social Skills Cluster:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>Leadership</td>
<td>Leadership</td>
</tr>
<tr>
<td>Communication</td>
<td>Communication</td>
<td>Communication</td>
</tr>
<tr>
<td>Influence</td>
<td>Influence</td>
<td>Influence</td>
</tr>
<tr>
<td>Change Catalyst</td>
<td>Trustworthiness</td>
<td>Change Catalyst</td>
</tr>
<tr>
<td>Conflict Management</td>
<td>Conflict Management</td>
<td>Conflict Management</td>
</tr>
<tr>
<td>Building Bonds</td>
<td>Building Bonds</td>
<td>Building Bonds</td>
</tr>
<tr>
<td>Collaboration &amp; Cooperation</td>
<td>Teamwork &amp; Collaboration</td>
<td>Teamwork &amp; Collaboration</td>
</tr>
<tr>
<td>Team Capabilities</td>
<td></td>
<td>Developing Others</td>
</tr>
</tbody>
</table>

The Work Profile Questionnaire: Emotional Intelligence (WPQei) is designed to assess a person's emotional intelligence, and to measure personality, team role
preferences, and the personal qualities and competencies that employees need to develop to manage emotion at work. The WPQei is used with employees in managerial, professional, service, and clerical occupations, and for personnel selection, job analysis, performance evaluation, leadership development, team building, and counseling. The WPQei is composed of 84 items that result in eight different scales (Self-Awareness, Empathy, Intuition, Managing Emotions, Motivation, Innovation, Social Skills, and Overall Emotional Intelligence).

### Table 5

*Summary Table of Emotional Intelligence Instruments with Validity and Reliability Coefficients*

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Author/s</th>
<th>Construct</th>
<th>N</th>
<th>Reliability Coefficients</th>
<th>Evidence for Validity</th>
<th>Correlation with Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ-I</td>
<td>Bar-On, R. (1997)</td>
<td>Temperament</td>
<td>3,831</td>
<td>Internal consistency of .76, test-retest of .85 and .75</td>
<td>Supported content and construct validity</td>
<td>Correlated with 16PF, PAI, Symptom Checklist 90, Zung Self-Rating Scale of Depression, and Short Acculturation Scale</td>
</tr>
<tr>
<td>ECI - 2.0</td>
<td>Goleman, D., Boyatzis, R., &amp; Hay Group (1999-2002)</td>
<td>Personality</td>
<td>3,931</td>
<td>Internal consistency from .73 to .92</td>
<td>Supported construct, content, and validity generalization evidence from predecessor instrument, the Self-Assessment Questionnaire</td>
<td>Correlated with Myers-Briggs, Type A/B personality measure, NEO-FFI, Managerial Style Inventory, and Organizational Climate Survey</td>
</tr>
<tr>
<td>MSCEIT</td>
<td>Mayer, J.D., Caruso, D.R., &amp; Salovey, P. (2002)</td>
<td>Emotional knowledge and skills</td>
<td>5,000</td>
<td>Internal consistency from .64 to .88 Test-retest of .86</td>
<td>Evidence of content, structural and predictive validity</td>
<td>Correlations with NEO and other personality instruments mostly low to moderate.</td>
</tr>
<tr>
<td>WPQei</td>
<td>Cameron, A. (1999)</td>
<td>Vocations</td>
<td>2,400</td>
<td>Internal consistency from .65 to .76</td>
<td>No evidence of concurrent, discriminant, or predictive validity</td>
<td>No information found</td>
</tr>
</tbody>
</table>
The following section provides a description of the most pertinent and current research on emotional intelligence as it relates to work performance. It will outline studies suggesting that emotional intelligence relates to an individual’s success at work and studies that suggest employers seek emotional intelligence qualities from potential employees.

**Emotional Intelligence and Work Performance**

Although emotional intelligence has been studied in relation to many variables, a significant amount of its literature has focused on the relations between emotional intelligence and performance. Specifically, research has examined the relationship of emotional intelligence with both task and work performance. The difference between task and work performance is that task performance refers to how well a person completes a single task, whereas work performance refers to how a person performs on all job tasks combined, not just a single task.

Furthermore, it appears that in recent times, corporations are aiming to hire individuals with various emotional intelligence skills. For example, in a Department of Labor and American Society for Training and Development survey of what 500 American employers desired most from entry-level workers, Carnevale, Gainer, Meltzer, and Holland (1998) found that aside from “basic reading, writing, and computational skills” (p.24), employers seek the following skills: learning to learn, listening, oral communications, problem solving, creative thinking, self-esteem, goal-setting/motivation, personal and career development skills, interpersonal skills, teamwork, negotiation, organizational effectiveness, and leadership. The emphasis on
emotional intelligence also seems to apply in other areas, for example, Dowd and Liedtka (1994) found that the most prominent factors used by employers to select masters of business administration graduates were communication skills, interpersonal skills, and initiative.

The potential importance of emotional intelligence’s effect on performance is suggested by classic studies such as the one by Hunter and Hunter (1984). The authors of this extensive meta-analytic study evaluating the predictors of work performance found that among other factors, cognitive assessments alone predicted as much as 25% of individuals’ work performance. One of their major conclusions addressed the lack of existing research evaluating added factors, such as social skills and personality traits. As such, and as a foundational proposition for emotional intelligence research, the authors recommend the inclusion of various social abilities and personality factors to increase the validity of the predictability of future work performance.

As noted in the definition section, the ability-based conceptualization of emotional intelligence has attained much attention from contemporary research. One example of such research is a study conducted by Lyons and Schneider (2005) that examined the influence of ability-based emotional intelligence on task performance in 126 undergraduate students. Using mental arithmetic and speech tasks, the authors found that two facets of emotional intelligence did indeed predict performance. Specifically, emotional perception and facilitating cognition both predicted performance on the speech task. For males, there was a negative relationship between emotional intelligence and task performance, whereas for females, the relationship was positive.
Jordan and Troth (2004) examined the relationship between ability-based emotional intelligence and performance on a survival situation and conflict resolution exercise in 108 undergraduate students. Participants were asked to rank 15 items according to their importance in surviving. Individuals completed this task first and then were assigned to teams to complete the task for a second time. Rankings were compared to survival expert’s rankings and scores on the difference were derived. The lower the difference score, the better the individual or team performed. Jordan and Troth found that although emotional intelligence was significantly related to the type of conflict resolution style that was adopted (r’s ranged from -.12 to .35), it was not significantly related to individual performance on the survival task (r=.08).

Although Jordan and Troth (2004) did not find a significant relationship between the ability model of emotional intelligence and performance on a task, several other researchers have found significant findings regarding this relationship. For example, Van Rooy and Viswesvaran (2004) conducted a meta-analysis of research conducted on predictors of emotional intelligence and performance. In this meta-analysis, performance included work performance as well as success in school (GPA), performance in sports, and performance on tasks that were part of a lab study. Their analysis included 69 samples of over 9,500 participants. They found that “emotional intelligence measures have predictive validity in most situations (more than 90% of the situations) but the exact magnitude varies by situation” (p.80).

There was a .24 correlation between emotional intelligence and employment as well as emotional intelligence and other performance (e.g. sports, lab tasks). The correlation between emotional intelligence and academic performance was slightly lower.
at .10. More specific to the ability conceptualization of emotional intelligence, Van Rooy and Viswesvaran found a true correlation of .19 between the MEIS, a precursor to the MSCEIT, and performance. An interesting finding, according to the authors, relates to the fact that three of the four ability model dimensions measured (assimilation, understanding, and management) had higher true correlations (.27, .25, and .21, respectively) than the overall measure.

Lopes, Côté, and Salovey (2006) also focused on the ability model of emotional intelligence in a recent review of the emotional intelligence literature. The authors’ inquiry focused on how ability emotional intelligence is assessed and how emotional intelligence is related to different outcome variables, such as performance, teamwork, and stress. One added variable that is examined in this review is prosocial behavior. Lopes et al. report that many researchers (e.g., Barchard, 2001; Brackett & Mayer, 2003) have found that emotional intelligence is related to prosocial behaviors as well as the quality of interpersonal relationships. The importance of evaluating prosocial behaviors and quality of interpersonal relationships in the workplace is highlighted in professions with high exposure to clients, such as consulting and sales positions, which demand strong prosocial and interpersonal skills.

Jordan and Ashkanasy (2006) utilized students in a business communication course to show that awareness of emotional intelligence is significantly related to effectiveness in teams. In this study, researchers assigned undergraduate students to teams and allowed them to work together for ten weeks. The teams reported on interactions and processes, such as team members’ moods, work environments and diversions. Team members also completed measures of ability emotional intelligence.
The results of this study demonstrated that Self-Awareness of emotional intelligence, a difference score between self and other-provided emotional intelligence ratings, was significantly related to the effectiveness of the team process, goal focus, and lastly, team effectiveness.

These findings are considered valuable since a) increasingly more businesses are team-oriented, and b) they demonstrate the importance of versatility in the use of emotional intelligence in the workplace. Additionally, this is consistent with the research on teams, which indicates that interpersonal processes within teams are a significant factor in its effectiveness (Campion, Papper, & Medsker, 1996). Druskat and Wolff (2001) suggest that emotionally competent group norms are a major factor in a team’s success, and the results of a study by Stubbs (2005) involving 422 participants representing 81 teams supported this theory.

In a landmark study of competence among over 2,000 supervisors, managers, and executives, Boyatzis (1982) found that 14 of the 16 abilities that differentiated superior performers from average performing managers or executives were related to traits of emotional intelligence. Similarly, Spencer and Spencer (1993) studied the competencies of star performers at 286 organizations. They found that 19 out of 21 general competencies that distinguished star performers from average performers depended on emotional intelligence. Furthermore, Goleman (1998) analyzed the competencies required by 121 organizations all over the world for 181 different jobs and found that 67% of the abilities required for good performance were emotional competencies.

According to Vernon, Villani, Schermer & Petries (2008), trait emotional intelligence addresses the individual differences that are attributed to genetic factors.
They delineate trait emotional intelligence as a distinct, compound construct that distinguishes itself from ability-based emotional intelligence due to heritability studies of personality. In their research, Vernon et al. claim that a substantial portion of individual differences in trait emotional intelligence can be directly attributed to genetic variation in the population. In their opinion, heritability contributes substantially to the developmental stability, including performance within individuals’ occupations, across the life span (Bratko & Butkovic, 2007; McGue, Bacon, & Lykken, 1993).

Although some conflicting findings regarding the predictability of ability-based emotional intelligence and performance exist, there seems to be increasingly more research that emotional intelligence is useful, if not crucial, in predicting performance in certain situations.

**Burnout as Occupational Stress Outcome**

Role stress alone is of relatively little importance to organizations because it cannot predict whether the stress will have a positive or negative influence (Singh, Goolsby, & Rhoads, 1994). Burnout, however, occurs only when the stressors overwhelm an individual’s coping resources and thus is a better predictor of job outcomes than the mere presence of role stress. Maslach (1982) has defined job burnout as the response to the chronic emotional strain of dealing extensively with other people. In simpler terms, job burnout seems to result from a greater preponderance of negative versus positive features in one’s environment: too much pressure, too many demands, and too much conflict combined with too few successes and rewards. Maslach and Jackson (1981, 1986) have operationalized job burnout with a measure that focuses on three main
components: emotional exhaustion, depersonalization, and diminished personal accomplishment.

Emotional exhaustion is characterized by a lack of energy and feelings that excessive chronic work demands have depleted a person’s emotional resources. Emotional exhaustion most frequently occurs in occupations that are “intensive” and “people-oriented” (Singh et al., 1994). Consequently, it follows that chefs and culinary executives have been found to experience high levels of emotional exhaustion (Rowley & Purcell, 2001). Depersonalization is another component of burnout and has been defined as a callous or excessively detached response to people whom one services (Maslach & Jackson, 1981, 1986). Although no formal research has been conducted to ascertain the validity of this statement in the populations studied in this research, there are various anecdotal reports discussing the disfranchise and high level of dissatisfaction among chefs (Rowley & Purcell, 2001). When at high levels, depersonalization may cause a cynical, callous, and negative attitude toward others. It may also lead an individual to treat others, including colleagues and superiors, as objects. Shirom (1989) has argued that depersonalization is a method to cope with emotional exhaustion.

The third component of burnout, diminished personal accomplishment, signifies a decline in both one’s feelings of competence and one’s successful achievement (Maslach & Jackson, 1981, 1986). Diminished personal accomplishment can be manifested in feelings of inefficacy, reduced motivation, and low self-esteem (Singh et al., 1994).

In general, burnout cannot be adequately described as a consequence of a single “stress” dimension. A preliminary search through the scholarly literature rendered small return for the research, which addresses the relationship between burnout and emotional
intelligence. Only seven studies within the last four years were found among the prevailing psychological databases (e.g. ProQuest, PsycInfo, PsycArticles, Science Direct and Sage Psychology Collection). An advanced search through the dissertation database provided an additional twelve studies conducted within the last five years. Thus, this area of research is scant possibly because the theory of emotional intelligence is still young in the psychological field.

Initially, types of models and assessments chosen for emotional intelligence and burnout were evaluated among the nineteen articles and dissertations compiled from this search. The majority of the studies conceptualized burnout based on the heavily researched Maslach Burnout Inventory (MBI) (e.g. Farmer, 2004; Mendes, 2002; Palser, 2005; Potter, 2006; Ricca, 2003). This model and assessment tool identifies three components of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. Specifically, emotional exhaustion is when “emotional resources are depleted [and individuals] feel they are no longer able to give of themselves at a psychological level” (Maslach & Jackson, 1986). Additionally, depersonalization is when a person’s attitude becomes negative toward others. Lastly, reduced personal accomplishment may occur when individuals become dissatisfied with their efforts on the job.

Those studies, which have examined burnout within the context of emotional intelligence have used the Maslach Burnout Inventory (Bartley, 2006; Budnik, 2003; Chan, 2006; Day, Therrien, & Carroll, 2005; Farmer, 2004; Gerits, Derksen, & Verbruggen, 2004; Mendes, 2002; Palser, 2005; Potter, 2006; Ricca, 2003). According to Schaufeli and Enzmann (1998), “it is by far the most popular instrument to assess
burnout: over 90% of the journal articles and dissertations used the MBI” (p. 71). As such, conceptualizing burnout as a three component experience of depersonalization, emotional exhaustion, and reduced personal accomplishment is most represented in the extant literature.

A multidimensional account appears necessary, referring not only to negative mood, but also to disturbances of motivation (e.g., loss of task interest) and cognition (e.g., worry). Matthews et al. (1999; see also Matthews, Campbell, et al., 2002) developed the Dundee Stress State Questionnaire (DSSQ) to assess multiple constructs related to state disturbance. The following three factors have been identified from the 11 scales of the DSSQ, that may signal three qualitatively different ways in which subjective stress may be experienced: (a) Task Engagement, corresponding to energy, task motivation, and concentration; (b) Distress, which refers to negative affects together with cognitions of lack of control; and (c) Worry, a construct that brings together various forms of self-referent, predominantly negative styles of thinking. Low task engagement may correspond to experiencing stress as fatigue-like symptoms of tiredness and loss of motivation. Task engagement and distress overlap substantially with affective state. Energetic arousal (which is similar to positive affect; Thayer, 1989) loads at about .70 on the Task Engagement factor, and tense arousal loads at about .80 on Distress (Matthews, Campbell, et al., 2002).

The multidimensional perspective on stress has two important implications. First, workers may experience qualitatively different forms of stress depending on the tasks required by their jobs. Second, the impact of stress on performance may depend on the vulnerability of the specific tasks performed to the particular stress states experienced at
work. Research links loss of sustained attention to reduced task engagement (Matthews, Davies, & Lees, 1990), impairments in working memory to distress (Matthews et al., 1999), and impairments in high-level verbal tasks such as reasoning and retrieval from semantic memory to worry (Zeidner, 1998). In the studies and literature review just cited, correlations between stress state measures and performance indices typically ranged from .20 to .40. Thus, predicting real-world performance impairments associated with stress requires differentiation of both multiple components of subjective stress response and multiple components of information processing and task performance.

Cropanzano et al. (2003) studied the relationship of emotional exhaustion, such that may occur with stress, and work performance. Their hypothesis was that emotional exhaustion would be negatively related to work performance. The researchers found that emotional exhaustion does indeed negatively influence work performance. While this study examined emotional exhaustion, which would be a part of stress, it was concluded that more research is needed to explore the employee’s perceived stress and work performance. This study explored the relationship of stress, exercise, and being overweight, and work performance.

Hughes (2000) documented the psychological effects of stress on employees. Some of these effects are diminished feelings of quality of life, reduced feelings of accomplishment, and poor self-esteem. Relationships may become threatened because of the poor esteem and chronic stress may turn into an anxiety or depressive disorder. Because stress is most often identified as related to work problems and work is such a large part of adult life, it can easily become chronic. As such, the conclusion is drawn that if employees do not feel good about themselves and work relationships are strained,
work performance may suffer. Here, also, further study is needed to explore whether predictability on these assumptions can be created.

In providing a rationale for the use of burnout measures, several researchers (e.g., Singh, 2000; Donald et al., 2005) have made the point that it is not appropriate to consider stressors and their direct relationship to performance. These researchers argued that a direct link would not necessarily be expected as a result of individual differences in coping with stressors. Two individuals may be exposed to the same levels of stressor but may cope differently. Thus, one worker may experience stress, whereas another does not, even though they have the same work environment. The argument states that burnout is a reflection of the individual's ability to adjust, adapt, and cope. Experiencing burnout is therefore evidence that the person is experiencing stress, so to understand the stress–productivity relationship it is necessary to examine burnout and productivity (Singh, 2000).

Therefore, almost by definition, burnout is associated with reduced work performance. Much of the available research points most strongly to emotional exhaustion as the primary dimension of burnout that predicts work performance. Given that emotional exhaustion can be characterized as a “feeling of being depleted of energy and drained of sensation” (Singh et al., 1994, p. 559), the conclusion could be drawn that depletion of energy is associated with reduced effort. Along similar lines, it would also be expected that those experiencing depression (e.g., Munz, Kohler, & Greenberg, 2001), with its symptoms of apathy and lethargy, would not perform well. What these studies leave unanswered is whether more general, non-energy related symptoms of psychological well-being should also be associated with reduced work performance.
Generally, there appears to be a significant gap in the existing literature regarding the relationship between emotional intelligence factors and the components of burnout (conceptualized by Maslach). As such, little is known about how these variables relate to one another, especially within the population of executive chefs. Most studies have included sample groups of teachers, police force, clergy, business employees, human service workers and health care professionals. Accordingly, Chapter Three provides a detail methodology plan for this study to address these gaps in the literature

**Absenteeism as Occupational Stress Outcome**

For the purpose of this dissertation research, the focus will attend to absenteeism as a criterion to evaluate occupational stress outcomes. One of the main characteristics of occupational behavior mostly affected by stress is reflected in withdrawal behaviors, often studied in the literature of organizational behavior by assessing turnover rates, lateness and absenteeism (Muchinsky, 1977). A review of the literature on absenteeism specifies that this topic is of concern to both the individual and the organization, which implicates a need for incorporation and thorough consideration when addressing workplace behaviors.

In a study conducted by Huse and Taylor (1962), the authors examined four indices of absenteeism, which are absence frequency (total number of times absent), absence severity (total number of days absent), attitudinal absences (frequency of 1-day absences), and medical absences (frequency of absences of 3 days or longer). Chadwick-Jones et al. (1971) extended these indices to include frequency, attitudinal, other reasons (number of days lost in a week for any reason other than holidays, rest days, and certified sickness), worst day (difference score between number of individuals absent on any
week’s “best” and “worst” days), time lost (number of days lost in a week for any reason other than leave), lateness (number of instances of lateness in any week), and Blue Monday (number of individuals absent on a Monday minus number of individuals absent on a Friday for any week). Noticeably, the differing definitions and types of absenteeism have produced conflicted findings due to the varied operationalizations that have been used.

The two most common individual-level measures of absenteeism are frequency and time lost indices (Chadwick-Jones, Nicholson, & Brown, 1982; Hackett & Guion, 1985). As an example, let’s consider a person who was absent twice in the last month. The first absence episode was only a day long, while the second absence episode lasted three entire days in length. In this example, a time lost measure of absenteeism would calculate the person to be absent four days in the last month, the frequency measure would indicate the person to be absent twice in the last month, while the attitudinal measure of absenteeism would calculate the person to be absent only once in the last month.

In recent studies, researchers have generally and most consistently defined absenteeism as the failure to report for scheduled work (Johns, 2002). Absenteeism data has largely been gathered through employee self-reports (e.g. Landerweerd & Bourmans, 1994) and company records (e.g. Martocchio, 1994). Obtained absence measures are often collected over varying periods of time, and are aggregated to form a composite measure of absenteeism (e.g. over a one-year period). References to a particular aspect of absenteeism are made whenever theoretically relevant, or when hypotheses are built around a specific measure.
Generally, research examining stress in relation to absenteeism has been
categorized as falling into the process framework as it seeks conclusions for the general
causal factors of absenteeism (stress correlates are seen as general causes of absence). A
second model utilized in research includes the decision framework in which cognitive
processes and decisions underlying an individual’s absence is proposed (Johns, 1997).
Although a decision-framework process is considered relevant in examining absenteeism,
these will not be included in this project. Rather, the categorization of the process
framework is utilized since the intent is to collect data on the number of days absent to
indicate the behavioral withdrawal from the work environment.

Johns (2002) states that the stress-causes-absence proposition is often explored
within the context of work withdrawal, escape, or medical model of absenteeism.
Consistent with the treatment of absence as a behavioral manifestation of stress in many
stress models, Hill and Trist (1955) were the first to suggest that work-related stressors
and stress may prompt individuals to withdraw or flee from the workplace by going
absent. In this escape model of absenteeism, employees are thought to stay away from
work because they want to avoid negatively perceived aspects of their work environment
(March & Simon, 1958). In the medical model of absenteeism, work absence is thought
to result from the inability to attend work due to a weakened state of physical or
emotional well-being (Johns, 2002).

In spite of the use of varied measures of absenteeism, the primary objective has
been to capture two main types of absenteeism, voluntary and involuntary (Hackett &
Guion, 1985). Voluntary absences are defined as being under the direct control of the
individual whereas involuntary absences are thought to result from factors beyond
immediate control. Many of the time lost measures of absenteeism, such as illness, transportation, and family related problems, are regarded as involuntary, because longer absences are assumed to result from factors beyond the control of an individual (Steers & Rhodes, 1978). Many of the frequency and attitudinal measures are assumed to result from the employee’s decision to be absent for any given reason (Hammer & Landau, 1981).

Central to this discussion is the role of confounding or extraneous influences on the stress-absence association, including various individual and social influences. Potential individual confounds in the stress-absence relationship have included motivational and cognitive aspects of personality (e.g. Clegg, 1983; Wiebe & Smith, 1997; Costa & McCrae, 1985; Watson & Clark, 1984). For example, Watson & Clark explain that individuals with high scores of neuroticism experience more distress, have favorable views of themselves, are introspective, and tend to focus on the negative side of events. Similarly, Stone & Costa (1990) denote how individuals with high scores of neuroticism can be described as having a tendency to be anxious, hostile, depressed, and somatically over-concerned. The potential influence of this disposition on stress appraisal is so strong that Brief, Burke, George, Robinson, and Webster (1988) have urged researchers to control for this variable in their examinations of occupational stress.

Additional personality factors, including Conscientiousness and the Type A Behavior Pattern (TABP) have been linked to stress. While individuals with high scores on Conscientiousness tend to persevere in the face of challenging situations (e.g. Hollenbeck, Klein, O’Leary & Wright, 1989; Ashton, 1998), individuals with TABP tend to experience higher levels of emotional distress in similar situations (Suls & Wan,
1989). Significant associations between absenteeism and other personality and dispositional variables, such as hostility (e.g. Vahtera, Kivimaki, Uutela, & Pentti, 2000), anxiety (e.g. Bernadin, 1977; Ferris, Youngblood & Yates, 1985), and extraversion (Judge, Marocchio & Thorensen, 1997) have provided further evidence for such influences on absenteeism.

Since part of the purpose of this research is to entail an evaluative measure of occupational stress outcomes, the demographic questionnaire inquired from participants on their recollected number of days absent from their work environment over the past year. This absenteeism data was used as one of the outcome measures that was mediated, as recommended by previous research, with the Conscientiousness factor as one of the personality variables that mediated between stress and absenteeism. Similarly, the Self-Awareness variable on emotional intelligence will be used as the factor to mediate between occupational stress and numbers of days absent.

**Summary**

This chapter reviewed the theoretical and empirical literature on the key constructs utilized in this study, including personality, emotional intelligence, burnout, and absenteeism. Each of these constructs was tied to the literature on occupational stress and work performance. Even though the published literature on culinary chefs is sparse, the research supports the hypotheses constructed for this project. The research methodology and design for testing the hypotheses is discussed in the following chapter.
Chapter Three

Research Methodology

Introduction

The purpose of this study is to investigate whether, and to what extent, Conscientiousness and Self-Awareness influence the occupational stress outcomes of absenteeism and burnout in culinary chefs. For the analysis, absenteeism was used as a dependent variable and as an independent variable. The objective of this study is not to confirm or disconfirm prior research, but to a) further uncover whether, and to what extent, Self-Awareness and Conscientiousness criteria support the existence of occupational stress outcomes reflected in absenteeism and burnout, and to b) further reveal which possible additional effects are suggested by covariation of factors to affect absenteeism and burnout. This chapter outlines the research design and intended approach used for this study. It includes a description of the participants and the method for their selection for the study, instruments, procedure for this study, plan for analysis, purpose statement, research questions, and hypotheses.

Research Methodology and Design

The research method and design selected for this study was a quantitative correlation and regression. The rationale for the selection of a quantitative versus a qualitative method was primarily for deductive purposes; data can be summarized, a systematic analysis be made, characteristics of a given sample be described, and a
A statistically accurate representation of certain phenomena be given. According to Williams and Monge (2001), “quantitative methods are typically appropriate when (1) measurement is relevant and possible, (2) statistical generalizations may be applicable to the problem, and (3) when probabilities or hypothesis tests are thought useful” (p.9).

The variables were selected based on conclusions drawn from prior research and are based on scholarly focused inferences on this subject. Specifically, based on the review of the contemporary literature on how Self-Awareness (as part of the emotional intelligence construct) and Conscientiousness (as part of the personality construct) individually and interactively affect occupational performance outcomes, a quantitative correlation and regression method seemed appropriate for research strategy. The burnout and absenteeism variables have been extensively researched in the literature on occupational stress and work performance factors.

The study was designed to measure the incidence and extent of occupational stress, as evidenced by scores of burnout and absenteeism in culinary chefs. The researcher selected the Self-Awareness factors from one of the most comprehensively used assessment of emotional intelligence, the ECI – 2.0, and the Conscientiousness factors from one of the most extensively used and validated personality scales, the NEO-FFI, to measure their individual and interactive effect on absenteeism and burnout. The experience of burnout itself was measured by a commonly used psychometric assessment in psychological research, the Maslach Burnout Inventory - GS, and absenteeism was measured by reported number of days absent from work.

This study utilized an online survey of 66 questions, including 39 items based on three well-established measures in scholarly research and 27 demographic items compiled
by the researcher. The survey method has been viewed as an effective method for determining participants’ attitudes, opinions, experiences, and beliefs (Creswell, 2003; Leedy and Ormrod, 2005). Additionally, Mitchell and Jolley (2004) noted that surveys have the advantage of allowing distribution to a large number of people while simultaneously permitting complete anonymity in responses.

**Participants**

Invitations for participation in the study were extended and limited to culinary chefs who fulfilled sample-specific demographic characteristics and worked in and around the metropolitan area of a large city in the Western United States. These included age (adults over eighteen years of age), communication and language skills appropriate to respond to the survey items (fluency in English), and work related conditions (currently employed).

Names and contact information of culinary chefs to be contacted for this study were obtained from an initial pool of 425 restaurants listed and published in the largest local magazine of a metropolitan city in the West. In order to randomly select participants, every second restaurant name from the overall pool of 425 restaurants was selected and each restaurant chef was invited to participate in the study. The final number of chefs contacted for participation was 213. Out of the total 213 chefs that were invited to participate, 70 responded to the survey, representing a 32.86% response rate.

An *a priori* power analysis was conducted in order to determine the minimum sample sizes needed to detect an effect of a given size. G*POWER 3 (Faul, Erdfelder, Lang, & Buchner, 2007) was used to calculate the appropriate sample size (Buchner, Erdfelder, & Faul, 1997). G* POWER 3 is a statistical online software program that
performs statistical analyses on statistical tests in behavioral research. The parameters set
to be calculated with G*POWER 3 included: an acceptable level for alpha (set at .05) and
power (.8) and an effect size of .15, which is a standard effect size that assumes a
medium effect.

Based on these results, to test the hypotheses of one predictor, the required sample
size was 54; to test the hypotheses of two predictors, the required sample size needed was
67; and to test for the hypotheses of three predictors, the required sample size needed was
76. Therefore, the actual sample size achieved with a 32.86% response rate (N=70) was
consistent with the sufficient statistical power needed to carry out multiple regression
analysis on Hypothesis 1 (H1a, H1b, and H1c) and Hypothesis 2 (H2a, H2a, and H2c),
and Hypothesis 3 (H3a and H3b) except for H3c. Even though the required 76
respondents that the power analysis indicated were needed to achieve power of .8 for a
medium size effect on the multiple regression analysis for all hypotheses was not met, it
did hold true for eight out of the nine hypotheses tested. This means that with exception
of one hypothesis (H3c) sufficient statistical power was achieved to ascertain statistical
significance for the rest of the hypotheses at a .8 power level.

Research Questions and Hypotheses

Since this investigation is intended to be viewed as exploratory, its aim is to
specify connections, sequences, and directionality between variables; still, no empirical
or clear theoretical bases for explicitly ruling out other connections exist, nor is this the
intent of this study. On that note, the objective of this study is not to confirm or
disconfirm prior research, but to a) further uncover whether, and to what extent,
Conscientiousness and Self-Awareness criteria support the existence of occupational
stress outcomes reflected in absenteeism and burnout, and to b) further reveal which possible additional effects are to affect absenteeism and burnout.

The purpose of this study is to investigate the possible correlations between Conscientiousness (as part of the personality construct), Self-Awareness (as part of the emotional intelligence construct), and occupational stress outcomes in culinary chefs. Specifically, the overarching research question is to ascertain whether, and to what extent, occupational stress results in absenteeism and burnout, presuming a correlational relationship between the variables under study exists.

Research questions and hypotheses generated for this study included:

**Research question 1**: What is the relationship between Self-Awareness and occupational stress outcomes among chefs? Null Hypothesis 1: There is no linear relationship between Self-Awareness and occupational stress outcomes among chefs.

**Hypothesis 1**: There is a significant linear relationship between Self-Awareness and occupational stress outcomes among chefs.

**Hypothesis 1a**: A significant linear relationship between Self-Awareness and burnout exists.

**Hypothesis 1b**: A significant linear relationship between Self-Awareness and absenteeism exists.

**Hypothesis 1c**: The combination of Self-Awareness and absenteeism have a significant linear relationship with burnout.

**Research question 2**: What is the relationship of Conscientiousness and occupational stress outcomes among chefs? Null Hypothesis 2: There is no linear relationship between Conscientiousness and occupational stress outcomes among chefs.
**Hypothesis 2**: There is a significant linear relationship between Conscientiousness and occupational stress outcomes among chefs.

**Hypothesis 2a**: A significant linear relationship between Conscientiousness and burnout exists.

**Hypothesis 2b**: A significant linear relationship between Conscientiousness and absenteeism exists.

**Hypothesis 2c**: The combination of Conscientiousness and absenteeism have a significant linear relationship with burnout.

**Research question 3**: What is the combined relationship between Self-Awareness and Conscientiousness and occupational stress outcomes among chefs? Null Hypothesis 3:

There is no linear relationship between the combination of Self-Awareness and Conscientiousness and occupational stress outcomes among chefs.

**Hypothesis 3**: There is a significant linear relationship between the combination of Self-Awareness and Conscientiousness and occupational stress outcomes among chefs.

**Hypothesis 3a**: A significant linear relationship between the combination of Self-Awareness and Conscientiousness and burnout exists.

**Hypothesis 3b**: A significant linear relationship between the combination of Self-Awareness and Conscientiousness and absenteeism exists.

**Hypothesis 3c**: A significant linear relationship between the combination of Self-Awareness, Conscientiousness, absenteeism and burnout exists.

Consideration was given to the following decision rules: If the null hypothesis is rejected, when the null hypothesis should be accepted, then the result is a Type I error.
Conversely, if the alternative hypothesis is accepted, when the alternative hypothesis should be rejected, the result is a Type II error. If either a Type I or Type II error is made, a wrong decision or an error in judgment would have occurred. These decision rules were used when testing the null hypotheses and alternative hypotheses. The suggested approach of increasing the population ($N$) sample size to a significant sample level was used with the inherent aim to reduce either a Type I or Type II error.

**Instruments**

This section provides brief descriptions of the research instruments and the demographic questionnaire used in this study. Detailed descriptions of the instruments and survey questions can be reviewed in Appendices D, E, F and G.

**Demographic Questionnaire**

A demographic questionnaire (Appendix G) was utilized to ascertain the criteria for participant inclusion. The items of the questionnaire, which inquired about particular chef-related characteristics, were developed from a review of the literature and by discussing the questions with culinary experts, including faculty in the hotel and restaurant management industry. The demographic questions utilized in this questionnaire include those that are commonly used in academic research: age, gender, ethnicity, relationship status, and location (by zip code). Items directly inquiring about chef related characteristics included: certification level, highest position achieved, type of operation in which they are currently working, team size, and number of years in occupation.

Questions inquiring about stress-inducing and stress-related conditions affecting the general health condition of those working in high intensity environments were also included in the demographic questionnaire. They were based on literature reviews and
included items such as: approximate weight and height (to ascertain for ratios relating to potentially over-/underweight issues and/or obesity), number of alcoholic beverages consumed per week, number of cigarettes smoked per week, number of hours of sleep per night, and number of hours of work per day and per week. Additionally, two questions directly addressed perceived current experience of stress (distinguishing between stress experience at work versus “in your private life”) with the option of answering with “yes” or “no”, and a follow-up question on each of those two inquiring about extent of the stress experience (rated on a 5-point Likert scale ranging from 1=“Extremely” to 5=“Not at all”). The last question related to stress related experience inquired about potential intent for resignation of the current job (“How likely is it you would quit this job if another of equal pay were available”?).

Absenteeism was assessed via two questions: “In the past twelve months, how many days (approximately) did you miss due to illness” and “in the past twelve months, how many days (approximately) did you miss due to ‘other reasons’”. Lastly, three questions were added at the end of the demographic questionnaire to assess for supervisory support. These items were included due to the evidence provided in the literature on the beneficial outcomes of supervisor support (as measured by feeling supported for valuable contributions and caring for well-being) in the workplace.

**Personality: NEO-FFI**

Personality will be assessed using the NEO-FFI (Costa & McCrae, 1992). The entirety of this psychometric assessment is a 60-item self-report instrument that assesses the so-called Big Five personality factors: Neuroticism (N), Extraversion (E), Openness to Experience (O), Conscientiousness (C), and Agreeableness (A). It is a shortened
version of the NEO Personality Inventory Revised (NEO-PI-R). The reported internal consistencies for the NEO-FFI scales are .86 for Neuroticism, .77 for Extraversion, .73 for Openness to Experience, .81 for the Conscientiousness subscales, and .68 for Agreeableness.

The scales show good concurrent validity with those of the NEO-PI-R, correlating .92, .90, .91, .77 and .87 (N, E, O, A, C, respectively) with their counterparts on the longer form (e.g., Costa & McCrae, 1995). The five factors of the NEO-FFI have proven fruitful in conceptualizing the personality of non-pathological individuals and have generated a prolific empirical literature (see Anastasi & Urbina, 1997; Costa & McCrae 1995). Higher scores on each factor denote more presence of the particular trait.

For the purpose of this study, only the 15 items associated with the Conscientiousness factor of the shortened NEO-FFI assessment will be used (Appendix D). Conscientiousness incorporates the following characteristic facets: competence, order, dutifulness, achievement striving, self-discipline, and deliberation. Of these 15 items, participants rated themselves using a 5-point Likert scale ranging from 1="Strongly Disagree" to 5="Strongly Agree".

**Emotional Intelligence: ECI - 2.0**

After a review of the technical information of the primary five emotional intelligence assessment instruments available, the Emotional Competence Inventory 2.0 (ECI – 2.0) has been selected for use in this study. Although a more recently developed Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) has the advantage of measuring emotional intelligence attributes as opposed to a mixture of recalled traits and skills (Salovey & Grewal, 2005), the ECI - 2.0 has been historically validated, entails a
large normative database, has been established for its validity and reliability, and is the product of over 18 years of extensive use and fairly detailed psychometric research (Goleman & Boyatzis, 2002, p.4).

The theoretical design of this study is based on the content provided in Table 1 below, which list the five emotional intelligence scales compared in this study and provides the justification for the utilization of the ECI’s Conscientiousness scale with the Big Five’s Self-Awareness scale. This table outlines correlates of total scores of various emotional intelligence assessments with each of the 5 items inherent in the Big Five instrument. The highly correlated relationship between Conscientiousness and the Self-Awareness cluster of the ECI-2.0 provides the justification for the utilization of these two subscales in this study (Table 1).

Table 1
Justification for Theoretical Design for ECI-2.0 among other emotional intelligence scales

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Neuroticism</th>
<th>Expressiveness</th>
<th>Openness to Experience</th>
<th>Agreeableness</th>
<th>Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCEI:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total EI</td>
<td>-0.08</td>
<td>0.11</td>
<td>0.25**</td>
<td>0.28**</td>
<td>0.03</td>
</tr>
<tr>
<td>Self-Report EI:</td>
<td>-0.19***</td>
<td>0.32***</td>
<td>0.43***</td>
<td>0.09</td>
<td>0.25***</td>
</tr>
<tr>
<td>Total EI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECI – 2.0: Self-Awareness Cluster</td>
<td>-0.07</td>
<td>0.47**</td>
<td>0.28**</td>
<td>0</td>
<td>0.30**</td>
</tr>
<tr>
<td>BarOn EQi:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total EQ</td>
<td>-.57***</td>
<td>0.37***</td>
<td>0.16*</td>
<td>0.27***</td>
<td>0.48***</td>
</tr>
<tr>
<td>TEIQue:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total EI</td>
<td>-.70***</td>
<td>0.68**</td>
<td>0.44**</td>
<td>-0.04</td>
<td>0.34**</td>
</tr>
<tr>
<td>Big Five Inventory:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E with E, N with N, etc.</td>
<td>.66***</td>
<td>0.76***</td>
<td>0.68***</td>
<td>0.66***</td>
<td>0.70***</td>
</tr>
</tbody>
</table>
The Emotional Competence Inventory 2.0 (ECI – 2.0) consists of 18 competencies arranged in four competency clusters (Wolff, 2004). The clusters and their underlying competencies are: Self-Awareness (accurate self-assessment, emotional awareness, self-confidence), Self-Management (achievement, adaptability, emotional self-control, initiative, optimism, transparency), Social-Awareness (empathy, organizational awareness, service orientation), and Relationship Management (change catalyst, conflict management, developing others, influence, inspirational leadership, teamwork & collaboration) (Table 4). The ECI - 2.0 has demonstrated very good internal consistency and reliability. The Cronbach’s alpha internal coefficients for the ECI clusters range from 0.73 (Trustworthiness) to 0.92 (Empathy), with an overall (other-rating) average internal consistency coefficient of 0.85. The internal coefficients for self-rating range from 0.61 (accurate self-assessment) to 0.85 (service orientation), with an overall average internal consistency coefficient of 0.75 (EI Consortium, 2002).

For the purposes of this study, participants completed the Self-Awareness items of this assessment totaling eight questions. For each item, the respondents indicated the extent to which they agree that they exhibited certain traits over the past twelve months using a 5-point Likert scale ranging from 1 = “Strongly Disagree/Definitely False” to 5 = “Strongly Agree/Definitely True”. The resulting total Self-Awareness scores were correlated with each of the dependent variable items (absenteeism and total burnout scores) of work performance.

**Burnout: MBI-GS (Maslach Burnout Inventory - General Survey)**

The Maslach Burnout Inventory (MBI; Maslach & Jackson, 1993) in its original version was designed to assess the three aspects of the burnout syndrome: Emotional
Exhaustion, Depersonalization, and a sense of Personal Accomplishment. A high degree of burnout is reflected in high scores on the Emotional Exhaustion and Depersonalization subscales and in low scores on the Personal Accomplishment subscale. This particular instrument was chosen over other possible instruments because of its extensive history and effectiveness in measuring burnout.

The Maslach Burnout Inventory – General Survey (MBI-GS; Schaufeli, Leiter, Maslach & Jackson, 1996) is a slightly modified version of the general MBI; it measures burnout among occupational groups where service providers have limited personal contact with customer or clients, which pertains to the study population. In contrast to other MBI instruments, the MBI-GS focuses on the performance of work, instead of on the service relationship (Maslach et al., 1996). According to Bakker, Demerouti, and Schaufeli (2002), the MBI-GS measures respondents’ relationships with their work on a continuum from engagement to burnout. Bakker et al. (2002) stated that when an employee is dedicated to doing excellent work and demonstrates the ability to complete the assignment, a positive engagement develops between these two variables. In addition, burnout is explained as a state of exhaustion in which one becomes cynical about the value of work and uncertain about the ability to perform.

The Maslach Burnout Inventory-General Survey (MBI-GS) (Maslach, Jackson, & Leiter, 1996) contains three subscales that measure different aspects of experienced burnout: (a) Exhaustion (Ex); (b) Cynicism (Cy); and (c) Professional Efficacy (PE) (Maslach, Jackson, & Leiter, 1996). The Exhaustion items are generic, without the MBI’s emphasis on emotions and without direct reference to service recipients (Leiter & Schaufeli, 1996). The subscale that differs to the greatest extent from the original MBI is
Cynicism, used instead of Depersonalization. Depersonalization refers to distancing oneself emotionally from service recipients and to the development of cynical attitudes toward them. Cynicism refers to distancing oneself from work itself and to the development of negative attitudes toward work in general (Demerouti, Bakker, Nachreiner, & Schaufeli, 2000). The Cynicism construct does neither directly refer to personal relationships at work, nor does it exclude such a reference (Schaufeli et al., 1996). It encompasses items expressing disengagement from work and lack of enthusiasm, such as “I have become more cynical about whether my work contributes anything”.

The MBI-GS’s 16-item Likert-type self-report measure is used to access subjective work-place outcomes and respondents’ relationships with their work on a continuum from engagement to burnout. Each of the 16 items comprising this measure asks respondents to determine how often they experience various thoughts or feelings about their job, based on a seven point response format ranging from 1 = “Never” to 7 = “Daily”. Scoring the MBI-GS scale involves computing the average rating on the 1 to 7 frequencies rating across the items within each of the three subscales.

Taken from research, the MBI-GS survey has clearly demonstrated validity and reliability across nations and occupational groups (Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Lee & Ashforth, 1996; and Schaufeli, Leiter, Maslach, & Jackson, 1996). Leiter and Schaufeli (1996) have shown that the internal reliability of each of these scales is acceptable. They found Cronbach’s alpha coefficients ranging from .84 to .90 for Exhaustion, .74 to .84 for Cynicism, and from .70 to .78 for Professional Efficacy. The professional efficacy construct is highly similar to personal accomplishment as
measured by the general MBI (Leiter & Maslach, 1988). However, in addition to its broader focus, including both social and non-social aspects of occupational accomplishments, the scale focuses more directly than the MBI on efficacy expectations with items such as: “At my work, I am confident that I am effective at getting things done” (Bandura, 1977, p.210).

Evidence of the validity of the MBI-GS was obtained by distinguishing it from measures of other psychological constructs that might be presumed to be confounded with burnout (Maslach, Schaufeli, and Leiter, 2001; Lee and Ashforth, 1996). For example, it is possible that the experience of burnout may be nothing more than the experience of dissatisfaction with one’s job. Leiter and Durup (1994) suggested that one would expect the experience of burnout to have some relationship to lowered feelings of job satisfaction. However, it was predicted that they would not be so highly correlated as to suggest that they were actually the same thing (Bakker et al. 2002).

A comparison of the participants’ scores on the MBI-GS and the measurement of general job satisfaction (n = 91 social and mental health workers) provided support for this reasoning. In viewing the correlations, job satisfaction had a moderate negative correlation with emotional exhaustion and professional efficacy had a slightly positive correlation with cynicism (Bakker, Schaufeli, Sixman, & Bosveld, 2001).

Schutte et al. (2000) focused on several studies that dealt with data on test and retest reliability of the MBI-GS. For a sample of graduate students in social welfare and administrators in a health agency (n = 53) the two test sessions were separated by an interval of two to four weeks. The test–retest reliability coefficients of .82 for emotional
exhaustion, .60 for professional efficacy, and .80 for cynicism were significant (Schaufeli et al. 1996).

According to Lee and Ashforth (1996), it is important to make a distinction between the three-burnout dimensions due to research that has revealed each has different causes and consequences. Exhaustion is clearly the result of job demands (including workload, emotional demands, unfavorable physical working environment) while cynicism and professional efficacy are strongly related to lack of job resources (including autonomy, social support, performance feedback) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). In addition, exhaustion seems to be the most important predictor of absenteeism (particularly absence duration), whereas cynicism/depersonalization and efficacy are more often found to predict personnel turnover and satisfaction (Schaufeli & Enzmann, 1998).

**Procedure**

For this study, data collection was conducted via online surveys. For anonymity purposes, no user identification codes and passwords were distributed; clicking on the survey link lead respondents directly to the active survey page.

Initial requests for participation in this study were sent to the randomly selected 213 restaurant chefs via emails and phone calls. Email addresses were obtained from public websites and personal disclosure. Information included in the email request for participation included a link to the survey and informed consent information. It was stated that submission of the survey online indicated consent for participation in the study. Survey dissemination was conducted over a two-month period. Due to a holiday and related events (Valentine’s Day and “Restaurant Week”), no recruiting efforts were
conducted during those high-demanding weeks. After the holiday and event week, a second email outreach was conducted to elicit additional responses.

Various strategies were employed in an effort to enhance the response rate. The first additional strategy was to obtain letters and emails of support from hospitality faculty and administrators, restaurant owners, and general managers, who agreed to disseminate invitations for participation to their known chefs that were part of the restaurants targeted for recruiting. The letters and emails sent by these contacts stressed the voluntary participation and confidentiality of all respondents. The last strategy implemented included requesting from restaurant owners and managers assistance in soliciting for participants during scheduled staff meetings. The researcher approached restaurant owners and managers personally and via phone requesting permission to collect email addresses from their chefs during scheduled staff meetings. Upon receipt of email addresses, the researcher forwarded the survey link to the volunteer participants along with a statement of gratitude for their participation.

The surveys entailed questions of three instruments: a) the Conscientiousness items from the NEO-FFI, b) the Self-Awareness items from the ECI–2.0, and c) the entirety of items of the MBI-GS, along with the demographic questionnaire. Instructions and the IRB approved Informed Consent content were included at the top of the main page of the survey prior to the questions section. The answering of all survey questions was important to the accuracy and reliability of the survey results, strengthening its predictive internal and external validities. Although the survey takes about 10-15 minutes to complete, it was not timed.
The researcher guaranteed the privacy of all participants. The confidentiality clause ensured the nondisclosure of any of the responders’ confidential information. Responders received a guarantee that their identity would remain undisclosed and confidential; meaning that the identity for both the collected and reported data will be maintained throughout the completion of the study and thereafter. In exchange for participation, responders were offered the opportunity to receive feedback on their results of the instruments by emailing their request for feedback to the researcher. Participants were graciously thanked for their efforts; however, it was stressed that there were no incentives for survey completion.

Data was gathered using FreeOnlineSurveys.com and interpreted using SPSS statistical software. Prior to sending the invitation for participation, permission was sought and granted from the University of Denver’s Ethics Committee as well as the University’s Institutional Review Board Committee.

**Data Analysis**

As described in detail in Chapter Four, the results section of this study will begin with a presentation of the basic demographic and chef characteristics information including descriptive statistics (means and standard deviations) of the quantitative variables and frequency distributions of the qualitative variables under study. Descriptive statistics were used in this research to analyze the data and describe trends in the data that reflect an individual research question or variable. As part of the regression analyses, correlation analyses were performed on all factors to determine the strength of the associations between and among the independent variables and the dependent variables. The data was analyzed by addressing each research question and hypotheses.
Prior to undertaking regression analyses, as recommended in the literature (Belsley, Kuh, & Welsch, 2001; Fox, 1991; Merler & VAnnatta, 2001), the researcher examined the data for violations of the assumptions of normality, linearity, reliability, and homoscedasticity. Therefore, the data was t-screened for such problems as wild data values (e.g. outliers), highly skewed distributions (e.g. univariate dispersion), and extreme nonlinearity (e.g. bivariate dispersion).

The survey results, which include the demographic data, were downloaded from FreeOnlineSurveys.com, saved as Microsoft Excel files, and imported into SPSS for analysis. Descriptive statistics (mean, standard deviation, and sample size) were calculated for each of the dependent and independent variables. Correlation analyses were performed to assess the strength and statistical significance of these relationships; correlations of the predictor variables (IVs) and burnout (DV) were obtained and reviewed for interrelatedness. A strong correlation will be determined if a correlation factor of .8 is observed. Bivariate correlations were used to investigate the relationships among the independent variables of Conscientiousness, Self-Awareness, and absenteeism, as well as the relationship of each independent variable with the dependent variable of burnout. Finally, multiple regression analyses were run to determine the effects of various independent variables (Conscientiousness, Self-Awareness, absenteeism) and the combination of those variables on the dependent variables (occupational stress outcomes).

**Summary**

Chapter Three described the methodology and technology used in the research study. Key points of this chapter discuss the research method, design approach, the
reason for selection of a quantitative method for this research and the rationale for the choice of population and sampling. Furthermore, the research questions and hypotheses were presented. Analytics results using correlation and regression models will be addressed and discussed in the next chapter.
Chapter Four

Results

Introduction

Chapter Four provides an overview of the research questions and examines the results of the analyses performed in the completion of this study. The purpose of this study was to investigate whether, and to what extent, Conscientiousness (as part of the personality construct) and Self-Awareness (as part of the emotional intelligence construct) influence the occupational stress outcomes of absenteeism and burnout in culinary chefs. Data were collected from employed culinary chefs in the restaurant and hotel industries. Relationships among the variables were investigated by means of bivariate correlations and linear regression using the Statistical Package for the Social Sciences (SPSS).

The results in this chapter present a description of the sample population including a summary of demographic variables as well as independent and dependent variables, correlation analysis between variables used in the regression, and results of the regression analyses. Related histograms and scatterplots are included in the appendix section of this paper, showing a graphical distribution for each of the independent and dependent variables in the regression analyses. Results for each of the three research questions are presented, and the null hypothesis will either be accepted or rejected based on findings. The chapter will end with a summary of the data results.
Data Analysis

Addressing missing data is an important component in any research. Missing items on a survey may be due to a careless response or a respondent not knowing the answer or being unwilling to make a decision to arrive at a best guess choice. In this research study, missing data issues were prevented by requiring all questions within the survey to be answered. Any survey with missed or unanswered items was unable to be submitted. Two separate surveys were submitted with partial answers. These entailed an answer of “n.o.y.b” for the question on how many alcoholic beverages were consumed during a week, the other response was part of the ethnicity question and was answered with “human”. Nonetheless, no surveys were received with missing data on any of the statistically relevant information, and were therefore included in full in the regression analyses.

Addressing non-normally distributed data presents an additional concern when analyzing research data. To assess normal distribution, histograms (see Appendix H) were reviewed for any outliers, and kurtosis and skewness for each of the variables were computed and assessed. In this study, no outliers were identified and normal distribution was evident in the histograms.

Demographics and exploratory variables

As discussed in Chapter Three, 213 surveys were distributed to culinary chefs via online surveys. Of the 213 distributed surveys, 70 were completed and returned, resulting in a response rate of 32.86%. Two surveys were missing one item each, but neither item was a scale item, so scores for all 70 respondents could be calculated for all three instruments.
As previously mentioned in Chapter Three, a number of questions were added to the online survey too further increase the richness of the data and to provide a multifold perspective on the characteristics and experience of culinary chefs. Data on these results were not statistically run and interpreted, but a summary statement of the results will be addressed in the discussion section.

Table 6 provides demographic information about the respondents surveyed. Of the respondents, 90% (n=63) of the respondents were male and 10% (n=7) were female. Approximately 74% (n=52) identified themselves as European American, followed by 11% (n=8) of Hispanic/Latino/a and approximately 9% (n=6) of multiracial backgrounds. The majority of respondents (n=36; 46%) of the respondents were single, followed by 37% married and 13% living together. The average weight of the respondents in the sample was approximately 190 pounds, and the average height was approximately 71 inches (or 5 feet, 11 inches).
Table 6

Demographic Characteristics of Respondents

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>90.0</td>
<td>63</td>
</tr>
<tr>
<td>Female</td>
<td>10.0</td>
<td>7</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>74.3</td>
<td>52</td>
</tr>
<tr>
<td>African American</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Hispanic/Latino/a</td>
<td>11.4</td>
<td>8</td>
</tr>
<tr>
<td>American-Indian</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Multiracial</td>
<td>8.6</td>
<td>6</td>
</tr>
<tr>
<td>International/Non-US Citizen</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>7.1</td>
<td>5</td>
</tr>
<tr>
<td>Relationship status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>45.7</td>
<td>32</td>
</tr>
<tr>
<td>Married</td>
<td>37.1</td>
<td>26</td>
</tr>
<tr>
<td>Separated</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Divorced</td>
<td>4.3</td>
<td>3</td>
</tr>
<tr>
<td>Widowed</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Living together</td>
<td>12.9</td>
<td>9</td>
</tr>
</tbody>
</table>

70

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>35.13</td>
<td>9.50</td>
</tr>
<tr>
<td>Approx. weight</td>
<td>190.07</td>
<td>42.86</td>
</tr>
<tr>
<td>Height (in inches)</td>
<td>70.69</td>
<td>2.80</td>
</tr>
</tbody>
</table>

Note: The sum across ethnicity and relationship status categories is more than 100% because respondents could choose more than one category.

Table 7 provides information about the respondents’ professional lives. Nearly one-third of the sample (n=22; 31%) held the title of Executive Chef, while approximately 29% (n=20) were Sous-Chefs. Another 14% (n=10) were Chef Owners, and 13% (9) were Junior Chefs. The vast majority (n=62; 89%) worked at a free-standing restaurant. Another 7% (n=5) worked at a hotel and approximately 6% (n=4) worked at a resort.
Table 7

*Professional Characteristics of Respondents*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest position achieved</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chef Owner</td>
<td>14.3</td>
<td>10</td>
</tr>
<tr>
<td>Chef's Assistant</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Corporate Executive Chef</td>
<td>7.1</td>
<td>5</td>
</tr>
<tr>
<td>Executive Chef</td>
<td>31.4</td>
<td>22</td>
</tr>
<tr>
<td>General Manager</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Junior Chef</td>
<td>12.9</td>
<td>9</td>
</tr>
<tr>
<td>Pastry Chef</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Personal Chef</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Sous-Chef</td>
<td>28.6</td>
<td>20</td>
</tr>
<tr>
<td>Type of operation worked in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotel</td>
<td>7.1</td>
<td>5</td>
</tr>
<tr>
<td>Resort</td>
<td>5.7</td>
<td>4</td>
</tr>
<tr>
<td>Convention Center</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Free Standing Restaurant</td>
<td>88.6</td>
<td>62</td>
</tr>
<tr>
<td>Institutional Catering</td>
<td>2.9</td>
<td>2</td>
</tr>
<tr>
<td>Hospital</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Casino</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Private Chef</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Chef Instructor</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Research and Development</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>4.3</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 8 summarizes the quantitative variables that describe respondents’ professional lives. The individuals surveyed missed very little work, on average, with a mean of only 2.36 days missed due to illness and 1.17 days missed due to other reasons. Approximately 11 alcoholic drinks were consumed per week on average, and approximately 31 cigarettes were smoked per week on average. Respondents reported sleeping an average of 7.56 hours per night and working an average of 10.36 hours per day, 5.37 days per week. The average number of culinary professionals working with the respondents in the kitchen was 7.56. Finally, the average length of time the respondents had worked in the culinary profession was 170 months (14.17 years).
Table 8
Professional Characteristics of Respondents (cont.)

<table>
<thead>
<tr>
<th>Sample (N = 70)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the past 12 months, how many days (approximately) did you miss work due to illness (e.g. not going to work due to feeling sick or being hospitalized)</td>
<td>2.36</td>
<td>8.00</td>
</tr>
<tr>
<td>In the past 12 months, how many days did you miss work due to &quot;other reasons&quot; (any other reason other than due to illness)</td>
<td>1.17</td>
<td>2.50</td>
</tr>
<tr>
<td>How many alcoholic beverages do you typically consume during a week (if you do not drink alcoholic beverages, type &quot;0&quot; or n/a)?</td>
<td>11.37</td>
<td>12.58</td>
</tr>
<tr>
<td>How many cigarettes do you typically smoke during a week (if you do not smoke, type &quot;0&quot; or n/a)?</td>
<td>30.55</td>
<td>58.03</td>
</tr>
<tr>
<td>How many hours do you typically sleep per night?</td>
<td>6.58</td>
<td>1.33</td>
</tr>
<tr>
<td>On average, how many culinary professionals (cooks, chefs, etc.) are working with you in the kitchen at the same time?</td>
<td>7.56</td>
<td>9.54</td>
</tr>
<tr>
<td>How long have you worked in the culinary profession (in months)?</td>
<td>170.00</td>
<td>109.20</td>
</tr>
<tr>
<td>On average, how many hours per day do you spend at work (e.g. 8 hours)?</td>
<td>10.36</td>
<td>1.99</td>
</tr>
<tr>
<td>On average, how many days do you work per week (e.g. 5 days)?</td>
<td>5.37</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Therefore, according to the results of the demographic characteristics of chefs, the most representative profile of the average respondent was a 35 year-old male of European American background, an average height of 5’11’’ and an average weight of 190 pounds. The results of the professional characteristics show that the most representative profile of the average respondent was an Executive Chef of a free standing restaurant that has missed an average of three days in the past twelve months, drinks and average of 11 alcoholic beverages per week, smokes an average of 30 cigarettes per week, sleeps an average of 6.5 hours per night, works alongside 7 or 8 culinary professionals in the
kitchen at any given time, has worked an average of 14 years in the culinary profession, and works 10 hours per day 5 days a week.

**Scoring and Descriptive Statistics**

Table 9 shows descriptive statistics for the dependent variable (e.g., overall burnout scores) and the independent variables (e.g., Conscientiousness measured by the NEO-FFI, Self-Awareness measured by ECI-2.0; and absenteeism). Note that absenteeism was measured as the sum of days missed for illness and “other reasons”.

Table 9

*Descriptive Statistics for all Dependent and Independent Variables*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>70</td>
<td>41.00</td>
<td>75.00</td>
<td>62.5143</td>
<td>7.12363</td>
</tr>
<tr>
<td>scale score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Awareness</td>
<td>70</td>
<td>22.00</td>
<td>40.00</td>
<td>32.0000</td>
<td>4.15288</td>
</tr>
<tr>
<td>scale score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnout</td>
<td>70</td>
<td>18.00</td>
<td>65.00</td>
<td>37.9286</td>
<td>12.24783</td>
</tr>
<tr>
<td>scale score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absenteeism</td>
<td>70</td>
<td>0</td>
<td>56</td>
<td>3.53</td>
<td>8.34</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The composite score for the Conscientiousness scale from the NEO-FFI in Table 9 spanned from a low score of 41 to a high score of 75. The Conscientiousness scale consisted of 15 items, and a test of reliability showed that Chronbach’s alpha for the scale was .82. The data range and mean for this study illustrate how the Conscientiousness score of the personality trait measure varied across the chef sample. Figures in Appendix H demonstrate the frequency distribution histogram of the composite Conscientiousness scores of the participating chefs. The histogram demonstrates a normally distributed range of scores.

The composite score for the Self-Awareness scale from the ECI-2.0 in Table 9 spanned from a low score of 22 to a high score of 40. The Self-awareness scale consisted
of 8 items, and a test of reliability showed that Chronbach’s alpha for the scale was .75. The data range and mean for this study illustrate how the Self-Awareness score of emotional intelligence varied across the chef sample. Figure demonstrates the frequency distribution histogram of the composite Self-Awareness scores of the participating chefs. This histogram also demonstrates a normally distributed range of scores.

The composite score for the Burnout scale in Table 9 spanned from a low score of 18 to a high score of 65. The Burnout scale consisted of 16 items, and a test of reliability showed that Chronbach’s alpha for the population under study in this study was .83. The data range and mean for this study illustrate how the burnout scores varied across the chef sample. Figure demonstrates the frequency distribution histogram of the composite Burnout scores of the participating chefs.

Correlation Matrix

An essential early step in completing multiple regression analysis is to ensure that the assumption of no multicollinearity has been met. Five of the research hypotheses are based on multiple regression analyses (H1c, H2c, H3a, H3b, and H3c), so this assumption was tested as part of the analyses. As displayed in Table 10, Pearson correlations were calculated between the four predictive variables. As none of the correlations reached the .80 threshold, this analysis shows that the variables are not too closely related.
Table 10
Multicollinearity: Pearson Correlation

<table>
<thead>
<tr>
<th></th>
<th>Conscientiousness scale score</th>
<th>Self-Awareness scale score</th>
<th>Burnout scale score</th>
<th>Absenteeism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness scale score</td>
<td>Pearson Correlation 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pearson Correlation 0.315**</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Self-Awareness scale score</td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pearson Correlation -0.321**</td>
<td>-0.198</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Burnout scale score</td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pearson Correlation -0.144</td>
<td>-0.085</td>
<td>0.120</td>
<td>1</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.233</td>
<td>0.482</td>
<td>0.323</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).

The correlation between the Conscientiousness scale score ($M = 62.51, S = 7.12$) and the Self-Awareness scale score ($M = 32.00, S = 4.15$) was $r(68) = -.321, p = .008$. This indicates that a significant negative relationship exists between Conscientiousness and Self-Awareness, although this was not tested in this study. The correlation between the Conscientiousness scale score ($M = 62.51, S = 7.12$) and the Burnout Scale score ($M = 37.92, S = 12.25$) was $r(68) = -.321, p = .007$. This indicates that a significant negative relationship also exists between Conscientiousness and Burnout, providing support for the tested hypothesis in hypothesis 2a. No other correlations were significant in the correlation matrix for the independent and dependent variables in this regression analysis.

Two other checks for multicollinearity of the predictive variables are included on the tables that follow: the tolerance levels and the variance inflation factor (VIF). The tolerance levels are noted below .1 and the VIF scores are well beneath 10, the relative
threshold levels highlighting trouble with the data. These values are shown in Tables 16, 22, 24, 26, and signal that there is no reason for concern that the predictive variables unduly influence each other.

**Regression Analyses Results**

**Research Question One**

Research question one focused on the relationship between Self-Awareness and occupation stress outcomes in chefs. The following research question, null hypothesis and alternative hypotheses were offered for analysis:

**Research question 1**: What is the relationship between Self-Awareness and occupational stress outcomes among chefs? Null Hypothesis 1: There is no linear relationship between Self-Awareness and occupational stress outcomes among chefs. Hypothesis 1: There is a significant linear relationship between Self-Awareness and occupational stress outcomes among chefs.

Hypothesis 1a: A significant linear relationship between Self-Awareness and burnout exists.

Hypothesis 1b: A significant linear relationship between Self-Awareness and absenteeism exists.

Hypothesis 1c: The combination of Self-Awareness and absenteeism has a significant linear relationship with burnout.

Research hypothesis H1a was not supported. A simple regression analysis revealed no linear relationship between Self-Awareness and burnout \([F (1, 68) = 2.78; \ p = .10]\). The correlation between the variables was \(r = 0.20\), from which the coefficient of determination was \(R^2 = .03\).
Research hypothesis H1b was also not supported. A simple regression analysis revealed no linear relationship between Self-Awareness and absenteeism \([F (1, 68) = 0.50; p = .48)]\). The correlation between the variables was \(r = 0.09\), from which the coefficient of determination was \(R^2 = -0.01\).

Research hypothesis H1c was also not supported. A multiple regression analysis revealed that the combination of Self-Awareness and absenteeism are not predictive of burnout \([F (2, 67) = 1.76; p = .18)]\). The correlation between the variables was \(r = 0.22\), from which the coefficient of determination was \(R^2 = -0.02\).
Research Question Two

Research question two focused on the relationship between Conscientiousness and occupational stress in chefs. The research question, null hypothesis and alternative hypotheses were:


Hypothesis 2: There is a significant linear relationship between Conscientiousness and occupational stress outcomes among chefs.

Hypothesis 2a: A significant linear relationship between Conscientiousness and burnout exists.

Hypothesis 2b: A significant linear relationship between Conscientiousness and absenteeism exists.

Hypothesis 2c: The combination of Conscientiousness and absenteeism has a significant linear relationship with burnout.

Research hypothesis H2a was supported by the data, and the null hypothesis rejected. A simple regression analysis revealed a significant positive linear relationship between Conscientiousness and burnout [F (1, 68) = 7.84; p < .01]. The correlation

### Table 16

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized Beta</th>
<th>Std. Error</th>
<th>Significance</th>
<th>VIF (Collinearity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Awareness</td>
<td>-.189</td>
<td>.352</td>
<td>.118</td>
<td>1.007</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>.104</td>
<td>.176</td>
<td>.389</td>
<td>1.007</td>
</tr>
</tbody>
</table>
between the variables was \( r = 0.32 \), from which the coefficient of determination was \( R^2 = 0.09 \).

Table 17

*Model Summary - Burnout*

<table>
<thead>
<tr>
<th>Variable</th>
<th>( r )</th>
<th>Adj. ( R^2 )</th>
<th>df</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>0.321</td>
<td>0.090</td>
<td>69</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Table 18

*Interaction Summary - Burnout*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized Beta</th>
<th>Std. Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>-0.321</td>
<td>0.197</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Research hypothesis H2b was not supported. A simple regression analysis revealed no linear relationship between Conscientiousness and absenteeism \([F (1, 68) = 1.45; p = .23]\). The correlation between the variables was \( r = 0.14 \), from which the coefficient of determination was \( R^2 = 0.01 \).

Table 19

*Model Summary - Absenteeism*

<table>
<thead>
<tr>
<th>Variable</th>
<th>( r )</th>
<th>Adj. ( R^2 )</th>
<th>df</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>0.144</td>
<td>0.006</td>
<td>69</td>
<td>0.233</td>
</tr>
</tbody>
</table>

Table 20

*Interaction Summary - Absenteeism*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized Beta</th>
<th>Std. Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>-0.144</td>
<td>0.140</td>
<td>0.233</td>
</tr>
</tbody>
</table>

Research hypothesis H2c was also not supported by the data, and the null hypothesis is accepted. A multiple regression analysis revealed that the combination of absenteeism and Conscientiousness revealed no significant linear relationship with burnout \([F (2, 67) = 4.09; p < .05]\). The correlation between the variables was \( r = 0.33 \), from which the coefficient of determination was \( R^2 = 0.08 \).
Table 21
*Model Summary - Burnout*

<table>
<thead>
<tr>
<th>Variable</th>
<th>r</th>
<th>Adj. R^2</th>
<th>df</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness and absenteeism</td>
<td>.330</td>
<td>.082</td>
<td>69</td>
<td>.021</td>
</tr>
</tbody>
</table>

Table 22
*Interaction Summary*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized Beta</th>
<th>Std. Error</th>
<th>Significance</th>
<th>VIF (Collinearity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>-.311</td>
<td>.200</td>
<td>.010</td>
<td>1.021</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>.075</td>
<td>.171</td>
<td>.522</td>
<td>1.021</td>
</tr>
</tbody>
</table>

**Research Question Three**

Research question three focused on the relationship between Self-Awareness and Conscientiousness and occupational stress outcomes in chefs. The research question, null hypothesis and alternative hypotheses included:

**Research question 3**: What is the relationship between Self-Awareness and Conscientiousness and occupational stress outcomes among chefs? Null Hypothesis 3:

There is no linear relationship between the combination of Self-Awareness and Conscientiousness and occupational stress outcomes among chefs.

**Hypothesis 3**: There is a significant linear relationship between the combination of Self-Awareness and Conscientiousness, and occupational stress outcomes among chefs.

**Hypothesis 3a**: A significant linear relationship between the combination of Self-Awareness and Conscientiousness and burnout exists.

**Hypothesis 3b**: A significant linear relationship between the combination of Self-Awareness and Conscientiousness and absenteeism exists

**Hypothesis 3c**: A significant linear relationship between the combination of Self-Awareness, Conscientiousness, absenteeism and burnout exists.
Research hypothesis H3a was not supported by the data, and the null hypothesis rejected. A multiple regression analysis revealed that the combination of Self-Awareness and Conscientiousness had a significant linear relationship with burnout \([F (2, 67) = 4.09; \ p < .05]\). The correlation between the variables was \(r = 0.34\), from which the coefficient of determination was \(R^2 = .09\).

<table>
<thead>
<tr>
<th>Table 23</th>
<th>Model Summary - Burnout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>r</td>
</tr>
<tr>
<td>Self-Awareness and Conscientiousness</td>
<td>.337</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 24</th>
<th>Interaction Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Standardized Beta</td>
</tr>
<tr>
<td>Self-Awareness</td>
<td>-.108</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.288</td>
</tr>
</tbody>
</table>

Research hypothesis H3b was not supported. A multiple regression analysis revealed that the combination of Conscientiousness and Self-Awareness were not predictive of absenteeism \([F (2, 67) = 0.78; \ p = .46]\) beyond the simple bivariate correlation between Conscientiousness and absenteeism. The correlation between the variables was \(r = 0.15\), from which the coefficient of determination was \(R^2 = -.01\).

<table>
<thead>
<tr>
<th>Table 25</th>
<th>Model Summary - Absenteeism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>r</td>
</tr>
<tr>
<td>Conscientiousness and Self-Awareness</td>
<td>.150</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 26</th>
<th>Interaction Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Standardized Beta</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.131</td>
</tr>
<tr>
<td>Self-Awareness</td>
<td>-.044</td>
</tr>
</tbody>
</table>
Lastly, research hypothesis H3c was also not supported by the data. A multiple regression analysis revealed that the combination of Conscientiousness, Self-Awareness, and absenteeism did not have a significant linear relationship with burnout \[F (3, 66) = 2.96; p < .05\). The correlation between the variables was \(r = 0.34\), from which the coefficient of determination was \(R^2 = .08\).

<table>
<thead>
<tr>
<th>Variable</th>
<th>r</th>
<th>Adj. R²</th>
<th>df</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness, Self-Awareness, and absenteeism</td>
<td>.344</td>
<td>.079</td>
<td>69</td>
<td>.038</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized Beta</th>
<th>Std. Error</th>
<th>Significance</th>
<th>VIF (Collinearity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>-.278</td>
<td>.211</td>
<td>.027</td>
<td>1.127</td>
</tr>
<tr>
<td>Self-Awareness</td>
<td>-.104</td>
<td>.359</td>
<td>.395</td>
<td>1.112</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>.071</td>
<td>.172</td>
<td>.547</td>
<td>1.023</td>
</tr>
</tbody>
</table>

**Summary**

Chapter Four has presented the data analysis of this research study. In summary, research question one examined whether there was correlation between Self-Awareness and occupational stress outcomes as measured by absenteeism and burnout. No significant correlation was found. Research question two examined if Conscientiousness was correlated with absenteeism and burnout. The findings revealed that Conscientiousness, significantly affect burnout in culinary chefs. No relationship between Conscientiousness and absenteeism was established. Research question three addressed if Conscientiousness and Self-Awareness combined affected occupational stress outcomes;
again, no significant correlations were found. The conclusions drawn from these results indicate that only the personality variable of Conscientiousness is significantly related to burnout. Unfortunately, the notion that Emotional Intelligence, at least as measured with this instrument and as a subscale, was not supported.

In the following chapter, the final discussion chapter, the research project will be discussed based on these findings, including its limitations, recommendations for future research, and implications for practice.
Chapter Five

Discussion

Introduction

This research study utilized a subscale of a well-known personality measure and emotional intelligence measure to investigate the relationship of these on occupational stress outcomes in culinary chefs working in a metropolitan city in the West of the United States. The population of practicing culinary chefs was selected due to an increasing focus in the contemporary literature on the high levels of stress, burnout, absenteeism and turnover exhibited by this particular group of professionals (Lee & Shin, 2005). To be regarded as an investigative research study, the researcher was seeking to apply previously collected knowledge of emotional intelligence and personality to a population of study that has been vastly ignored in the counseling psychology literature specifically, but also in the academic research literature at large.

The independent variables selected for this study included the Self-Awareness factors from the ECI – 2.0 and the Conscientiousness factors from the NEO-FFI to measure the individual and interactive effect on absenteeism and burnout. The experience of burnout itself was measured by the Maslach Burnout Inventory - GS and absenteeism was measured by reported number of days absent from work. Statistical regression analyses were performed to identify any statistical relationships between the independent variables and the dependent variables. Several research methods were initially reviewed
to gather data for this research study. Considering all factors, a quantitative online survey was considered to be the most appropriate method for data collection for this study.

The goal of this chapter is to provide the research conclusions precipitated from the data analyses, the implications of the dissertation findings, and recommendations for future research on chefs. The conclusions are reflective of the three research questions and the null hypotheses and alternative hypotheses posed for each of the questions. Implications are offered based on the reflections of the results from the Self-Awareness scales and Conscientiousness results to add to future research ideas, literature reviews, research design, and data collection and analysis. The assumptions and limitation of the study are also presented. Chapter Five concludes with personal reflection and observations of the research experience and findings.

**Summary of the Study**

This study contributes to the understanding of culinary chefs’ occupational stress outcomes in some meaningful ways. It provides preliminary empirical support in the notion that certain demographic and professional characteristics of culinary chefs affect occupational stress outcomes. Specifically, the results of the present study indicate that the personality variable of Conscientiousness might predict burnout in chefs. Surprisingly, Self-Awareness by itself, or combined with absenteeism did not significantly affect burnout in this study. As a result, the summary of this research study concludes that only one hypothesis (H2a) – a statistically significant negative relationship between Conscientiousness and burnout - was supported by the findings; all other hypotheses (H1a, H1b, H1c, H2b, H2c, H3a, H3b, and H3c) were rejected.
Discussion of the Results

Research Question One

Research question one focused on the extent to which Self-Awareness relates to the experience of occupational stress outcomes, measured in absenteeism and burnout, in chefs. Research question one analyzed if chefs’ Self-Awareness data produced by the total Self-Awareness factors of the ECI-2.0 correlated with statistical significance with the total burnout scores of the MBI-GS and the number of days chefs were absent. The null hypothesis stated there would be no correlations between the variables.

The first research hypothesis proposed that chefs with relatively low Self-Awareness would be significantly more susceptible to developing symptoms of burnout than those with relatively high Self-Awareness. This hypothesis was not supported. Similarly, the second hypothesis proposed that chefs with relatively low Self-Awareness would be significantly more susceptible to remaining absent from work. Again, the result of this analysis provided no statistically significant correlation.

The data also failed to support hypothesis three, which stated that chefs with relatively low Self-Awareness and a high number of days absent from work would be more prone to demonstrate burnout symptoms. This third hypothesis relating to research question one also did not find statistically significant support. To summarize the implications of the results of the first research question, the regression analyses revealed no statistically significant correlations for any of the three hypotheses (H1a, H1b, and H1c) relating to Self-Awareness, absenteeism, and burnout.

The non-significant findings relating to the relationships between Self-Awareness, absenteeism and burnout is conceptually possible because of several factors. A leading
aspect of this issue may relate to Self-Awareness as a construct in general. The finding is understandable when considering the different nature of processes involved. Not only is there considerable disagreement amongst researchers about the viability of utilizing self-report measures when assessing for perceived, subjective experiences (Furnham & Stringfield, 1994; Harris & Schaubroek, 1988, Landy & Farr, 1980); but this seems particularly true for self-report statement on constructs such as Self-Awareness, which, theoretically, require self-reflection, self-critical evaluation, and insight. These three processes can operate as distinctively different constructs, and the lack of clarity, consistency in definitions, and the, at times, contradictory findings in the published research, for example, attest for the complexity of this construct.

Similarly, this may have affected the outcomes on absenteeism. The results demonstrating no relationship between Self-Awareness and absenteeism may not only be attributable to construct and definition problems with the Self-Awareness construct itself, but also highlight the need for additional research on absenteeism. Further discovery in this area may shed light into the potential of the various detrimental effects of absenteeism on employees relating to achievement, promotion, self-esteem and employment potential, for example.

Moreover, in order for the Self-Awareness score to increase, participants may need to have the requisite motivation. To the extent to which chefs felt obligated, pressured by time constraint, or even fatigued, for example, when participating in this research, may have affected and reduced the effect size in the present study. Since motivation was not measured in the present research, additional research may be required in order to investigate this possibility.
Taken as a whole, the results revealing no significant relationship between Self-Awareness and occupational stress outcomes raise questions regarding the utilization of the Self-Awareness subscale measure taken as part of the ECI-2.0. Replication of this study in the future might incorporate the utilization of the ECI-2.0 measure in its entirety. The dimension of Self-Awareness of the ECI-2.0 identifies emotional awareness, accurate self-assessment, and self-confidence as part of its construct. Incorporating the entirety of the assessment that include Self-Management (emotional self-control, transparency, adaptability, achievement, initiative, and optimism), Social Awareness (empathy, organizational awareness, service orientation), and Relationship Management (developing others, inspirational leadership, change catalyst, influence, conflict management, and teamwork & collaboration) may reveal stronger correlations for the factors under study.

In summary, it appears that more work is required to fully explain the lack of support for research question one in this study. Although results in the present research do not provide consistent and unequivocal support for the significance of Self-Awareness, further research on this topic may increase its theoretical and empirical value moving forward.

**Research Question Two**

Research question two addressed the extent to which Conscientiousness relates to the experience of occupational stress outcomes, measured in absenteeism and burnout, in chefs. Research question two analyzed if chefs’ Conscientiousness data produced by the total Conscientiousness factors of the NEO-FFI correlated with statistical significance
with the total burnout scores of the MBI-GS and the number of days chefs were absent. The null hypothesis stated there would be no correlations between the variables.

The first research hypothesis within this section proposed that chefs with relatively high Conscientiousness would be significantly more susceptible to developing symptoms of burnout than those with relatively low Conscientiousness. This hypothesis was supported. The second hypothesis proposed that chefs with relatively high Conscientiousness would be significantly less susceptible to remaining absent from work. The result of this analysis showed no statistically significant correlation. Similarly to hypothesis one, the results of the data on hypothesis three were not supported; Conscientiousness and number of days absent did not show a relationship to support burnout in either direction.

To summarize the implications of the results of the second research question, the regression analyses revealed one statistically significant correlation (for H2a) and no statistically significant correlations for hypotheses H2b and H2c relating to Conscientiousness, absenteeism, and burnout.

The research on personality factors and work performance has consistently supported Conscientiousness predicting burnout in a variety of professions (Huebner & Mills, 1994; Wyle, 2003; and Zellars et al., 2004). As described in the literature review section of this study, the associations between personality variables and absenteeism have provided evidence on its influences on work performance and occupational stress (Bernadin, 1977; Ferris, Youngblood & Yates, 1985; Vahtera, Kivimaki, Uutela, & Pentti, 2000; Judge et al., 1997). For this reasons, it is not surprising that a statistically
significant negative relationship between Conscientiousness and burnout was confirmed in this study.

Unfortunately, the linkage between Conscientiousness and absenteeism was not supported. Few of the respondents in this study reported missing days from work, whether due to health reasons or personal reasons. Although it is relatively unclear about the particular reasons for the lack of low absenteeism rates in chefs, the following factors might be contributing factors. First, the participant sample lacked heterogeneity, which may have been a major contributor to the homogenous results of the study. More than average, the main characteristics of the sample represented 35 year-old Caucasian males working between 6-8 hours per week for five days per week.

Although not inquired in this study, the geographical location of those sampled may have contributed to the heterogeneity of the responses. All chef participants reported working within the same general geographical area in a metropolitan city in the Midwest; a city which has been consistently reported in the national media to be amongst the “top cities in the U.S.” based on lifestyle and work-life balance possibilities. In order to be able to generalize the results to a larger population sample, a replication of this study is necessary to evaluate absenteeism rates amongst a nationwide sample of chefs.

**Research Question Three**

Research question three addressed the extent to which the interaction of Conscientiousness and Self-Awareness relates to the experience of occupational stress outcomes, measured in absenteeism and burnout, in chefs. Research question three analyzed if chefs’ Self-Awareness data produced by the total Self-Awareness score results of the ECI-2.0 and the Conscientiousness data produced by the total
Conscientiousness factors of the NEO-FFI correlated with statistical significance with the total burnout scores of the MBI-GS and the number of days chefs were absent from work. The null hypothesis stated there would be no correlations between the variables.

The first research hypothesis within this section proposed that chefs with relatively low Self-Awareness and relatively high Conscientiousness would be significantly more susceptible to developing symptoms of burnout than those with relatively high Self-Awareness and Conscientiousness. This hypothesis was not supported. The second hypothesis proposed that chefs with relatively low Self-Awareness and low Conscientiousness would be significantly more susceptible to remaining absent from work. The result of this analysis provided no statistically significant correlation. The results of the data on hypothesis three were also not supported, indicating that there is no significant relationship between Self-Awareness, Conscientiousness and absenteeism.

In summary, the implications of the results of this third research question revealed no statistically significant correlations for H3a, H3b, and H3c relating to all four variables under study (Self-Awareness, Conscientiousness, absenteeism, and burnout).

**Recommendations for Future Research**

Recommendations stemming from this research study include replication of the study and continuous research of chefs and culinary professionals at large. A magnitude of ideas for further investigation (e.g. inclusion of particular variables) to study might arise through qualitative analysis, such as focus group discussions and interviews with chefs. Additional demographic characteristics and their respective impact on stress, absenteeism and burnout may be investigated and incorporated in future research. Future
research in the interaction of emotional intelligence, personality traits, and burnout in
general is needed to address the literature gap in these areas.

Replication of this study that includes the full assessment on emotional
intelligence (utilizing the ECI-2.0) and personality factors (utilizing the NEO-FFI) might
yield differing results. A much larger sample size and different methodology might be
recommended for this process to be considerate of time and investment of chefs.
Replicating the chef population might prove to be beneficial particularly since the
representation sample was solely focused on one small geographical area. Conducting
this study to include a national and/or international sample might provide further insights
into the generalizability of the results to the chef population globally.

Research on chefs or culinary professionals within psychology is sparse. Further
insights might be obtained through mixed method or qualitative research study focusing
on, for example, the relationship between supervisory support and team support, which
might be beneficial in drawing inferences on stress relief and resilience. Furthermore,
researchers could acquire additional information through structured exit interviews
inquiring about reasons for withdrawing from their jobs, subjective responses about
strategies to alleviate stress and stress-related outcomes, turnover intention and job
satisfaction.

Limitations

**Research Approach and Design**

Limitations to this study’s *research approach and design* included those typical to
all correlational research. Although correlations between variables can allow researchers
to make predictions, correlation does not imply causation. Consequently, regardless of
the correlations found, it cannot be stated that high Conscientiousness scores, for example, causes high burnout or low absenteeism. Similarly, a low correlation could mean that no linear relationship exists, yet the data could present a non-linear relationship. Also, unforeseen confounding variables can still limit the practical application of correlational analysis.

Additionally, a common limitation attributable to survey is twofold: one, the survey remained limited to an online format, and b) it did not address any qualitative information that would elaborate on reasons for experiencing stress or reasons that counteract the experience of stress. Further conclusions could be drawn from these qualitative results to be studied in future research, meaning that added variables could ascertain further direction and understanding of the experiences of stress, strain, burnout, in the chef population.

Limitations to this study’s utilization of a quantitative correlation and regression design included those that are typical to all research utilizing non-experimental methods. According to Rubin & Babbie (2005), an experimental research design, using a control group and experimental group, is the only way to ensure internal validity. Since the cross-sectional design is not experimental, or even quasi-experimental for that matter, possible threats to internal validity, such as maturation threat, single group threat, and instrumentation, cannot be ruled out. While this study could not be sure that the relationship of burnout and/or absenteeism to Self-Awareness or Conscientiousness was causal, relationships needed to be statistically examined. For these reasons, the validity and reliability of the measures, not the internal validity of a causal design, were the important issues to consider in order to ensure rigor in the research.
On the other hand, external validity reflects the ability to generalize the findings of a study cross population and settings beyond the current sample and study conditions (Rubin & Babbie, 2005; Schutt, 2001). As stated, the study cannot fully expect to achieve external validity by employing non-probability sampling methods (Schutt, 2001). Still, replication of this study with larger samples in the future might more appropriately improve generalizability of this study’s findings.

**Research Sample**

Limitations to this study’s research *sample* included those that typical to all research utilizing convenience samples as part of their chosen sample under study. Although careful consideration was given to randomize the sample population of chefs within the geographical region of study, it nevertheless exhibits criteria of a convenience sample method. The convenience elements of this study include the targeting of chefs of restaurants published within a journal, the targeting of chefs within restaurants and hotels mainly, and the targeting of chefs within a given zip code zone. Therefore, caution must be exerted in generalizing the results to other settings (e.g. casinos, private kitchens, etc.), other industries (e.g. tourism, business, health sector), geographical locations (e.g. nationwide, outside the United States), and occupations outside the framework of this study.

While careful consideration was given to recruit culinary chefs with native English language skills, it is unknown how many in the sample participants included workers for whom English was a second language. As such, survey question items may have been misunderstood and/or misinterpreted, rendering the submitted data faulty.
Although none of the by the researcher reviewed data demonstrated a notable problem in this area, this issue is deemed worthy to denote.

Additionally, the difference of the aimed and anticipated sample size of 76 while the actual final sample size was composed of 70 respondents provides another set of limitations in the study. Although the study achieved to meet the sufficient response rate needed to carry out multiple regression analysis on all hypotheses except for H3c, the following actions could have been taken to increase the response rate for this study: individual face-to-face meetings (for recruiting of participants, imparting information on the research study and addressing any questions or concerns about the study), group face-to-face interactions (kitchen staff meetings at restaurants and hotels, or culinary conferences).

An additional item for consideration potentially affecting the results of the study includes the nature of each participant’s emotional well-being. Since this research proposal assessed individuals who are anticipated to be affected by burnout and/or serious work-related stress, it is important to consider the effect of emotional drain which may be leaving them with little energy, time, or resources to engage and partake in this study. Aligned with this statement is also the general various other forms of emotional and cognitive stresses and strains that may impede and affect the follow-through on and participation in this study. Therefore, it seems reasonable to consider that only those culinary chefs that found the interest, motivation, and time to respond to the survey may have done so for this study.
Research Assessments

Limitations to this study’s utilization of assessments included those that are typical to all research utilizing self-report measures to evaluate their experiences. Although diligence has been used in ascertaining assessment instruments that have been used extensively in published research within peer reviewed professional journals, this study utilizes questions from the ECI – 2.0, NEO-FFI, and MBI - GS, all of which are self-report measures. Self-report measures are stated to be subject to response bias, which inherently limit a study’s validity. All measures based on self-evaluation may include over-inflated scores as well as socially desirable responding, a contaminant to self-report data collection (Paulhus, 1991) that can limit the reliability and validity of the study. An added, pertinent element of this argument is that participants may be faking-good in their responses due to a lack of awareness and/or understanding of their condition.

The theoretical assumptions of this research study remained intact and did not prove to adversely impact the results of the study. It was assumed that all respondents were over 18 years of age, spoke English with enough fluency to comprehend and respond to the survey items, and were currently working as chefs in a kitchen environment of 2 or more additional cooks or chefs. It was also assumed that respondents were truthful in their responses to the survey. The overall completeness of the online survey and lack of missing data derived from the ability of the chefs to follow directions. The truthfulness of the chefs’ responses was taken at face value based on the time invested in completing the survey; the truthfulness is limited to the chefs’ understanding of the items and questions inherent in the questionnaire.
**Summary & Conclusions**

Notwithstanding the limitations and suggestions for future research, this research study addressed some important first step finding for understanding how certain personality factors and emotional intelligence factors might influence occupational stress outcomes in culinary chefs.

There were significant strengths to this research study. The scales and assessment instruments used were efficient and effective tools. The support of faculty and staff for contact names within the selected sample were an additional positive factor that assisted in the response rate. Lastly, the present research has been conducted in real-world applied environments, rather than in the traditional academic settings. Still, with appropriate modifications in the research design and methodology, the replication of this research with different populations and/or variables seems easily possible and appropriate.
References


Murphy, K. R. & Sideman, L. Murphy, K. R. (2006). *The two EIs: A critique of emotional intelligence: What are the problems and how can they be fixed?* (pp. 37-58.). Lawrence Erlbaum Associates, Mahwah, NJ


APPENDIX A

IRB APPROVAL

University of Denver

Sylk Sotto-Santiago, MBA
Manager, Regulatory Research Compliance

Certification of Human Subjects Approval

Tel: 303.871.4052
APPENDIX B

INFORMED CONSENT AND PROJECT DESCRIPTION

Dear Chef:

You are invited to participate in a study designed to investigate your experiences as a culinary professional. You were chosen for the study because you are 18 years of age, a culinary professional, and able to understand English. The questions are specific to your thoughts, experiences, and your work environment. Your participation will aid in the understanding of your profession as a culinary chef.

This study is being conducted by Tanja Hinterstoissner, M.A. to fulfill the dissertation requirement for the Counseling Psychology Ph.D. program at the University of Denver. Results of this study will be used to evaluate your experiences as a culinary professional only. Tanja Hinterstoissner, M.A. can be reached by phone at (303) 815-2317 or by email at thinters@du.edu. This project is being supervised by Dr. Patrick Sherry, Associate Professor of Counseling Psychology, University of Denver, Denver, CO 80208, and can be reached at (303) 871-2495 or psherry@du.edu.

Participation in this study should take about 15-20 minutes of your time. Participation will entail responding to an online survey in which questions about your experience as a culinary professional will be asked. You will be asked to fill out a short demographic questionnaire. Participation in this project is strictly voluntary. The risks associated with this project are minimal, which may or may not induce some discomfort. If, however, you experience discomfort, you may discontinue your participation at any time. We respect your right to choose not to answer any questions that may make you feel uncomfortable. Refusal to participate or withdrawal from participation will involve no penalty or loss of benefits to which you are otherwise entitled. Your responses will be anonymous, which means that no one will be able to connect your identity with the information you provide. Please do not identify yourself with your name, social security number, or any other identifying information anywhere on the questionnaire. Your submission of the questionnaire will signify your consent to participate in this study.

If you have any concerns or complaints about your participation in this study, please contact Dr. Susan Sadler, Chair, Institutional Review Board for the Protection of Human Subjects, at (303) 871-3454, or Sylk Sotto-Santiago, Office of Sponsored Programs at (303) 871-4052, or write to either the University of Denver, Office of Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121. You may keep this page for your records. If you would like a summary of the results of this study, please send an email to thinters@du.edu.
Thank you for your time and participation in this study. Your contribution will provide information and knowledge aimed at improving our understanding of your profession and your experiences therein. You can access the survey by going to: http://FreeOnlineSurveys.com/rendersurvey.asp?sid=xdvqe3imhmqnf4q847452

Tanja Hinterstoißer, M.A.
Doctoral Candidate at The University of Denver
Dear Colleague and Friend,

I am writing to let you know that a research study is being planned that may be of interest to you. It involves collecting information from culinary professionals within the hotel and restaurant industry about their thoughts and experiences as a culinary professional. These perspectives will offer rich data to better understand and support the training, development, recruiting and retention of professionals within your organization and industry.

My hope with this letter is to successfully enlist participants for this study who would volunteer to share their experiences as a culinary professional. I would be grateful if you would pass along to others who might be interested in participating. This study has been approved (PENDING) by the Institutional Review Board at the University of Denver.

Participants need to meet the following criteria:
- Adult (at least 18 years of age)
- Able to read and communicate in English
- Currently working as a culinary professional, including cook, sous chef, junior chef, executive chef, corporate executive chef, or chef owner

For those interested in participation in this study, please know that you are under no obligation to participate and you may withdraw at any time. By completing the survey at http://FreeOnlineSurveys.com/rendersurvey.asp?sid=xdvqe3imhmnf4q847452, you are granting consent for participation in this study. Please be sure to thoroughly review the information prior to completing the survey.

Your comments and questions regarding this study are welcomed, so please feel free to contact any of us. We look forward to hearing from you.

Thank you very much,

Tanja Hinterstoisser, M.A.
Principal Investigator
303.815.2317
thinters@du.edu

Patrick Sherry, Ph.D. [Dissertation Chair]
Department of Counseling Psychology
College of Education
University of Denver
303.871.2495
psherry@du.edu
APPENDIX D

ECI – 2.0 (SELF-AWARENESS SUBSCALE ITEMS)

DUE TO COPYRIGHT LAWS
THE READER IS ASKED TO CONTACT

HAY GROUP
MCCLELLAND CENTER FOR RESEARCH AND INNOVATION

100 Penn Square East
Philadelphia, PA 19107-3388
1-(800) 861-2000

TO EXAMINE THE

ECI – 2.0 (EMOTIONAL COMPETENCE INVENTORY)
APPENDIX E

NEO-FFI (CONSCIENTIOUSNESS SUBSCALE ITEMS)

DUE TO COPYRIGHT LAWS
THE READER IS ASKED TO CONTACT
PSYCHOLOGICAL ASSESSMENT RESOURCES INC.
P. O. BOX 998 ODESSA FL 33556
1-(800) 331-8378
TO EXAMINE THE
NEO-FFI (FIVE FACTOR INVENTORY)
APPENDIX F

MASLACH BURNOUT INVENTORY – GENERAL SURVEY (MBI - GS)

DUE TO COPYRIGHT LAWS

THE READER IS ASKED TO CONTACT

CONSULTING PSYCHOLOGIST PRESS inc.

3803 East Bayshore Road

Palo Alto CA, 94303

1-(800) 624-1765

TO EXAMINE THE

MASLACH BURNOUT INVENTORY – GENERAL SURVEY
APPENDIX G

STUDY QUESTIONNAIRE

DEMOGRAPHIC ITEMS

Please respond honestly to the following questions:

Your age...

Your gender...

- [ ] Female
- [ ] Male
- [ ] Other (Please Specify):

Your ethnicity...

- [ ] European American
- [ ] African-American
- [ ] Hispanic/Latino/a
- [ ] American-Indian
- [ ] Multiracial
- [ ] International/Non-US Citizen

Other (Please Specify):

Your relationship status...

- [ ] Single
- [ ] Married
- [ ] Separated
- [ ] Divorced
- [ ] Widowed
- [ ] Living Together

Your approximate weight (e.g., 185 lbs)... 

Your height (e.g., 5'10” or 5 feet, 10 inches)...

In what zip code (city) do you work?

In the past 12 months, how many days (approximately) did you miss work due to...
illness (e.g. not going to work due to feeling sick or being hospitalized)

In the past 12 months, how many days did you miss work due to "other reasons" (any other reason other than due to illness)?

How many alcoholic beverages do you typically consume during a week (if you do not drink alcoholic beverages, type "0" or n/a)?

How many cigarettes do you typically smoke during a week (if you do not smoke, type "0" or n/a)?

How many hours do you typically sleep per night?

What certification level do you presently hold (e.g. CMC, CEC, CWC, CCE, etc.)?

In your current profession, what is your highest position achieved?

- Cook I
- Cook II
- Sous-Chef
- Junior Chef
- Pastry Chef
- Executive Chef
- Corporate Executive Chef
- Chef Owner
- Other (Please Specify):

In what type of operation do you presently work?

- Hotel
- Resort
- Convention Centers
- Free Standing Restaurant
- Institutional Catering
- Hospital
- Casino
- Private Chef
- Chef Instructor
- Research and Development
- Other (Please Specify):

On average, how many culinary professionals (cooks, chefs, etc.) are working with you in the kitchen at the same time?

How long have you worked in the culinary profession (e.g. 4 years, 2 months)

On average, how many hours per day do you spend at work (e.g. 8 hours)?

On average, how many days do you work per week (e.g. 5 days)?
Are there circumstances at work that cause you to feel stressed?

**How stressed to you feel when at work?**

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</tbody>
</table>

Are there circumstances in your private life (not related to work) that cause you to feel stressed?

**How stressed do you feel about circumstances in your private life (not attributable to work)?**

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How likely is it you would quit this job if another of equal pay were available?

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Generally, do you feel supported by your superior (individual who evaluates your performance)?

**To what extent do you perceive your superior values your contributions?**

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**To what extent do you perceive your supervisor cares about your well-being?**

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Other (Please Specify):
APPENDIX H

HISTOGRAMS

NEO-FFI

![NEO-FFI Histogram]

- Mean = 62.5143
- Std. Dev. = 7.12363
- N = 70

ECI-2.0

![ECI-2.0 Histogram]

- Mean = 32.03
- Std. Dev. = 15.288
- N = 70
MBI-GS

Mean = 37.5206
Std. Dev. = 12.24783
N = 70

Frequency

Burnout scale score

Mean = 37.5206
Std. Dev. = 12.24783
N = 70
APPENDIX I

SCATTERPLOTS

*Hypothesis 1a: Simple regression between Self-Awareness and burnout*

![Scatterplot showing the relationship between Self-awareness and burnout](image1)

- $R^2$ Linear = 0.039

*Hypothesis 1b: Simple regression between Self-Awareness and absenteeism*

![Scatterplot showing the relationship between Self-awareness and absenteeism](image2)

- $R^2$ Linear = 0.007
Hypothesis 2a: Simple regression between Conscientiousness and burnout

Hypothesis 2b: Simple regression between Conscientiousness and absenteeism
## APPENDIX J
### Matrix of Correlations of Factors

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<th>Bo</th>
<th>Ab</th>
<th>Stress at work</th>
<th>Month in profession</th>
<th>Hours of sleep</th>
<th>Cigarettes per week</th>
<th>Alc per week</th>
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**Correlation is significant at the 0.05 level (2-tailed).**

**Correlation is significant at the 0.01 level (2-tailed).**
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**. Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).
APPENDIX K
Matrix of Correlation Factors – Legend

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