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## How Overqualification Impacts Job Attitudes and Well-Being: The Unique Roles of Perceptions and Reality

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How Overqualification Impacts Job Attitudes and Well-Being:  
The Unique Roles of Perceptions and Reality

by

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A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts  
Department of Psychology  
College of Arts and Sciences  
University of South Florida

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perceived overqualification

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## **Dedication**

This thesis is dedicated to Marcus Arvan, who is not only my husband, but also my colleague, role model, and greatest supporter. It is also dedicated to my parents, Gurmit Sandhu and Shirley Sheroian, who first encouraged me to pursue this path, and who continue to amaze me with their unconditional love, guidance, and wisdom. Lastly, it is dedicated to my three older sisters, Andreana McCullough, Alaina Sandhu, and Karina Sandhu, who have supported and inspired me since the day I was born.

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## Table of Contents

List of Tables	iii
List of Figures	iv
Abstract	v
Chapter One: Introduction	1
Overqualification	3
Objective and Subjective Overqualification	4
Theoretical Perspectives on Overqualification	6
Overqualification, Job Attitudes, and Well-Being	7
Job Attitudes	8
Health and Well-Being	9
Limitations to the Overqualification Literature	10
Person-Job Fit Theory	12
Person-Job Fit and Strain	14
Relative Deprivation Theory	15
Relative Deprivation and Strain	16
Mediating Effects of Relative Deprivation	17
Individual Moderators of Overqualification and Its Outcomes	19
Cognitive Ability	19
Negative Affectivity	21
Achievement Striving	22
Alternative Models	25
The Current Study	25
Chapter Two: Method	28
Participants and Procedure	28
Classification Into O*NET-SOC Occupations	31
Measures	32
Objective Overqualification	32
Overeducation	33
Skill Overqualification	34
Cognitive Ability Overqualification	35
Perceived Overqualification	36
Relative Deprivation	36
Achievement Striving	37
Cognitive Ability	38
Conversion Into Standardized SAT Scores	38

Representativeness of College Entrance Exams	39
Negative Affectivity	39
Job Satisfaction	40
Psychological Distress	40
Physical Symptoms	40
Demographics	41
Analytic Strategy	41
Chapter Three: Results	43
Correlational Analyses	43
Model Testing	45
Confirmatory Factor Analyses:	45
Hypothesized Model	48
Alternative Models	49
Moderated Regression Analyses	51
Chapter Four: Discussion	53
Implications	57
Limitations and Suggestions for Future Research	58
Conclusion	61
References	62
Tables	68
Figures	75
Appendices	82
Appendix A: O*NET Skills	83
Appendix B: Perceived Overqualification	85
Appendix C: Relative Deprivation	86
Appendix D: Achievement Striving	87
Appendix E: Negative Affectivity	88
Appendix F: Job Satisfaction	89
Appendix G: Psychological Distress	90
Appendix H: Physical Symptoms	91
Appendix I: Demographics	92
Appendix J: Institutional Review Board Approval Letter	93

## **List of Tables**

Table 1	Hypotheses and Statistical Analyses	68
Table 2	Descriptive Statistics and Reliabilities	69
Table 3	Intercorrelations Among Study Variables	70
Table 4	Model Fit Statistics	71
Table 5	Moderated Regression Results of Cognitive Ability Predicting Relative Deprivation	72
Table 6	Moderated Regression Results of Negative Affectivity Predicting Relative Deprivation	73
Table 7	Moderated Regression Results of Achievement Striving Predicting Perceived Overqualification	74

## **List of Figures**

Figure 1	Scatterplot of the relationship between objective overqualification and perceived overqualification.	75
Figure 2	Scatterplot of the relationship between perceived overqualification and relative deprivation.	76
Figure 3	Scatterplot of the relationship between relative deprivation and job satisfaction.	77
Figure 4	Scatterplot of the relationship between relative deprivation and psychological distress.	78
Figure 5	Scatterplot of the relationship between relative deprivation and physical strain.	79
Figure 6	SEM results for the hypothesized model.	80
Figure 7	SEM results for the alternative model with direct effects of objective overqualification on outcomes.	81



## **Abstract**

The recent global economic downturn has stimulated a growing interest among scholars in how employees interpret and respond to the circumstance of being overqualified. However, the overqualification literature has been hindered by uncertainty regarding the extent to which employees' perceptions of being overqualified are based in reality. The present study sought to address this concern by proposing and testing a theoretical model of objective overqualification, perceived overqualification, job satisfaction, and well-being using a cross-sectional sample of full-time employees who had recently graduated from college. Additionally, the present study investigated cognitive ability, achievement striving, and trait negative affectivity as potential moderators of several relationships delineated in the proposed model. Results indicated that the data were consistent with the proposed model, which argues that objective overqualification predicts employees' perceptions of being overqualified, which creates feelings of relative deprivation and ultimately manifests in poorer job satisfaction and reduced well-being. Importantly, however, the pattern of relationships among study variables suggested that strain outcomes were mostly driven by perceived overqualification. Furthermore, employees' perceptions of being overqualified appeared to be influenced considerably by unmeasured factors besides objective overqualification, potentially including dissatisfaction with other aspects of the job. There was no support for the hypothesized individual moderators. Overall, the study highlights the importance of taking a more nuanced approach to studying overqualification phenomena and cautions against the assumption that being objectively overqualified is a necessarily undesirable circumstance for individuals and their employers.

## **Chapter One**

### **Introduction**

In the aftermath of the 2008-2012 global financial crisis and the tortuous road to economic recovery, scholars have increasingly focused on individuals who find themselves in less-than-desirable employment situations (McKee-Ryan & Harvey, 2011; Liu & Wang, 2012). Overqualification is a specific kind of inadequate employment that occurs when employees have more qualifications, such as education or experience, than are required by their jobs (Maynard, Joseph, & Maynard, 2006; Erdogan, Bauer, Peiro, & Truxillo, 2011). Overqualification is significant in that it is perceived negatively by hiring managers and may act as a barrier to employment (Erdogan et al., 2011). Especially concerning to organizational researchers is the growing body of evidence that overqualification can have deleterious effects on employees and the organizations who employ them, particularly if the overqualification is perceptual in nature (i.e., self-reported). Indeed, recent research suggests that employees who perceive themselves as overqualified have poorer job attitudes and well-being (McKee-Ryan & Harvey, 2011; Liu & Wang, 2012), are more likely to voluntarily turnover (Maynard & Parfyonova, 2013), and engage in more counterproductive work behaviors (CWBs) (Liu, Luksyte, Zhou, Shi, & Wang, 2015), which are voluntary negative behaviors directed towards other organizational members that potentially harm an organization and its stakeholders (Spector & Fox, 2005).

Being an area of relatively new interest to management scholars and industrial-organizational psychologists, theoretical and measurement-related issues abound in recent reviews on overqualification (e.g., Erdogan et al., 2011; Liu & Wang, 2012). A key area of

concern is the lack of clarity on the relationship between objective and subjective measures of overqualification; similarly, there is ambiguity surrounding their respective relationships with criteria of interest. This uncertainty presents a serious challenge to the conclusions and practical implications that can be drawn from the overqualification literature. After all, decisions about the appropriateness of hiring an overqualified employee are likely to be based on objective indices of overqualification (Maltarich, Reilly, & Nyberg, 2011; Erdogan et al., 2011), but if objective overqualification operates distinctly from employees' perceptions of overqualification, hiring managers may erroneously believe that they should turn down the strongest candidates for the job based on the evidence that employees who perceive themselves to be overqualified are more dissatisfied and likely to turnover. Another related issue in the literature is irresolution regarding the appropriate theoretical perspective through which overqualification and its outcomes should be understood (Erdogan et al., 2011). All of these issues are exacerbated by poor measurement, which is common in studies on overqualification (Liu & Wang, 2012).

The goal of the current study is to address some of these critical theoretical and conceptual concerns by developing and testing a model of overqualification that illuminates the relationships between employees' objective overqualification and perceptions and interpretations of being overqualified, and demonstrates how they mutually predict outcomes. Specifically, the proposed model utilizes an integrative theoretical framework that draws upon both person-job fit theory and relative deprivation theory in order to delineate the nature of the relationships between objective indicators of overqualification, employee perceptions of overqualification, negative reactions to the discrepancy between one's current and ideal employment situations (i.e., relative deprivation), and employee job satisfaction and well-being. In addition to

developing and testing this new model, the present study investigates whether several individual difference variables moderate several relationships specified in the model.

This introduction begins with a review of the overqualification literature. The following two sections draw upon person-job fit theory and relative deprivation theory to argue for relationships between objective overqualification, perceived overqualification, relative deprivation, job dissatisfaction, and reduced psychological and physical well-being. The next section proposes several individual difference variables that may influence the hypothesized processes and outcomes of overqualification. Finally, I provide a detailed overview of the current study and explain how it contributes to the literature.

### **Overqualification**

Overqualification occurs when individuals possess more education, experience, knowledge, skills, and abilities than required by their jobs (Maynard et al., 2006).

Overqualification can be understood as a narrower type of underemployment, which is a broader term used to describe employment situations that are in some way inadequate (Erdogan et al., 2011; Watt & Hargis, 2010). In his seminal article, Feldman (1996) identified five dimensions of underemployment: possessing more formal education than a job requires (*overeducation*), being involuntarily employed in a field outside the area in which one received formal education (*job field underemployment*), possessing higher-level skills and/or having more work experience than required by a job (*skill/experience underutilization*), being employed part-time or temporarily due to involuntary reasons (*hours underemployment*), and being underpaid when compared to one's previous job or to others with similar education and skills (*pay underemployment*) (Mc-Kee-Ryan & Harvey, 2011). Overqualification thus combines the overeducation and skill/experience underutilization dimensions of underemployment (Maynard

et al., 2006). In addition to surplus education, skills, and experience, overqualification also includes surplus knowledge and abilities (Erdogan et al., 2011).

Overqualification and underemployment are multidisciplinary topics that attract scholars from a diverse range of fields, including economics, sociology, and industrial-organizational psychology. Although both overqualification and underemployment are multifaceted, their scope and focus differ. Whereas underemployment includes broader economic indicators such as being underpaid and involuntary part-time work, overqualification focuses specifically on employee attributes and characteristics that are not required or utilized by their jobs (Erdogan et al., 2011). A key distinction in both constructs is whether the dimension(s) being studied are objective or subjective in nature. I will now discuss this important distinction in greater detail.

### **Objective and Subjective Overqualification**

Overqualification, like underemployment more broadly, can be understood as having objective and subjective components. Objective overqualification aims to ascertain whether objective employee qualifications (i.e., education, experience, knowledge, skills, and abilities) exceed actual job demands and requirements. An example of an objective overqualification measure would involve comparing employees' obtained level of education to the education level required by their jobs. Subjective overqualification, which is often referred to as perceived overqualification, captures employees' overall perceptions of feeling overqualified (Erdogan et al., 2011). There are a number of established scales of perceived overqualification; one of the most frequently used scales is Maynard and colleagues' (2006) Scale of Perceived Overqualification (SPOQ). The SPOQ contains items such as "I have more abilities than I need to do my job" and "Someone with less education than myself could perform well on this job."

Perceived overqualification thus entails an evaluative element in which employees have judged that their qualifications exceed the qualifications required by their jobs.

It is important to distinguish between objective or subjective *constructs* from objective or subjective *measures* of overqualification. To illustrate, Verhaest and Omey (2006) identified four ways of measuring overeducation objectively (i.e., as a dimension of objective overqualification). The direct self-report method is to simply ask employees whether or not they have more education than required by their jobs. The indirect self-assessment method asks employees what the required education level is for their job, and then compares their responses to their actual level of education. The job analysis method bases the required educational level for a given job on job analysis data (e.g., from the Occupational Information Network or O\*NET), and then compares to the actual level of education. Finally, the realized match method determines the required educational level for a given job using the distribution of educational levels for workers in that occupation. Accordingly, even when overeducation is conceptualized objectively (as a dimension of objective overqualification), it can be measured in a number of ways that vary in the extent to which they employ more subjective versus more objective data.

Most of the existing research on overqualification has focused exclusively on perceived overqualification (Erdogan et al., 2011). Some researchers have argued that the predominant focus on perceived overqualification is justified, since it is likely a more proximal predictor of employee outcomes than objective overqualification (Erdogan et al., 2011). In general, however, researchers are increasingly concerned that the extent to which perceptions of overqualification (and underemployment more broadly) are based in objective indicators is largely unknown (Maltarich et al., 2011; Feldman, 2011; McKee-Ryan & Harvey, 2011; Liu & Wang, 2012). To the best of my knowledge, only several existing studies have explicitly tested the relationship

between objective and perceived overqualification. All three studies found a positive association between the two variables, but it is difficult to draw firm conclusions since they either relied upon employees' direct self-assessments to measure overqualification objectively (McKee-Ryan, Virick, Prussia, Harvey, & Lilly, 2009) or utilized a dichotomous objective overqualification variable (Maynard, Brondolo, Connelly, & Sauter, 2015; Liu et al., 2015), though most researchers suggest that overqualification is a continuous variable that should not be dichotomized (e.g., Luksyte & Spitzmueller, 2011). Although empirical tests of the relationship between subjective and objective overqualification are extremely rare, most researchers believe that they are distinct but related constructs (e.g., Liu & Wang, 2012). A number of researchers have suggested that subjective overqualification mediates the relationships between objective overqualification and employee outcomes (e.g., Maltarich et al., 2011; Feldman, 1996).

### **Theoretical Perspectives on Overqualification**

Overqualification, like underemployment more broadly, is generally seen as having negative consequences for employees and organizations by creating negative job attitudes, reducing well-being, and increasing turnover among employees (Feldman, 1996; Erdogan et al., 2011; Liu & Wang, 2012). The two most frequently applied theoretical frameworks to explain the effects of overqualification and underemployment in the organizational literature are person-job (P-J) fit theory and relative deprivation theory (Luksyte & Spitzmueller, 2011; Erdogan et al., 2011). The P-J fit theory approach conceptualizes overqualification as a special type of person-job misfit in which one's qualifications (e.g., skills, knowledge, and abilities) do not match job demands; in turn, employee perceptions of this incongruence cause negative individual and organizational outcomes (Feldman, 2011; Luksyte & Spitzmueller, 2011). The relative deprivation theory approach to overqualification focuses on the negative consequences

that arise when employees perceive that their current job conditions fail to meet their expectations (i.e., job situations that they desire and feel entitled to).

P-J fit theory and relative deprivation theory both emphasize that overqualification is a stressful experience for employees (Luksyte & Spitzmueller, 2011). However, each theory is not without its critics. While P-J fit theory has been praised as a “parsimonious” framework for overqualification, it has also been criticized for failing to explain why perceptions of overqualification may persist even if individuals are not objectively overqualified (Luksyte & Spitzmueller, 2011). Some researchers have therefore argued that relative deprivation theory provides a better account of the psychological nature of overqualification than P-J fit theory (Erdogan et al., 2011). On the other hand, however, Luksyte and Spitzmueller (2011) point out that the relative deprivation theory approach may induce individual biases into measures of overqualification that may not correspond to objective markers of overqualification. Studies that rely solely on employees’ feelings of relative deprivation may therefore be primarily assessing personality. Both person-job fit theory and relative deprivation theory will be discussed in greater detail in subsequent sections.

### **Overqualification, Job Attitudes, and Well-Being**

Job attitudes and well-being are among the most commonly investigated outcomes in the overqualification and underemployment literature (Liu & Wang, 2012; McKee-Ryan & Harvey, 2011). Recently, scholars have also explored performance, voluntary turnover, and counterproductive work behaviors (CWBs) as outcomes of perceived overqualification (Erdogan & Bauer, 2009; Fine & Nevo, 2008; Maynard & Parfyonova, 2013; Liu et al., 2015), although the findings on performance are mixed (Erdogan et al., 2011) and may depend on contextual



factors such as the extent to which overqualified employees' peers are also overqualified (Hu et al., 2014).

Given that they are the focus of the present study and are the primary criteria in many existing studies, I will now review empirical findings on how job attitudes and well-being relate to objective and perceived overqualification.

**Job Attitudes.** Consistent negative patterns have emerged between perceived overqualification and job attitudes. Perceived overqualification has been found to negatively relate to job satisfaction (Johnson, Morrow, & Johnson, 2002; Fine & Nevo, 2008; Erdogan & Bauer, 2009; Maynard et al., 2006; McKee-Ryan et al., 2009; Maynard & Parfyonova, 2013) and organizational commitment (Johnson et al., 2002; Maynard et al., 2006; McKee-Ryan et al., 2009; Maynard & Parfyonova, 2013) across a number of studies. Perceived overqualification has also been positively linked to turnover intentions (Maynard et al., 2006; McKee-Ryan et al., 2009).

The relationships between job attitudes and objective overqualification are less clear. In terms of overeducation, studies using the direct self-assessment method (i.e., asking individuals whether or not their current job requires their level of education) have found a negative link between overeducation and job satisfaction (Nabi, 2003) and organizational commitment (Feldman & Turnley, 1995). Additionally, Feldman and Turnley (1995) found that independent raters' assessment of whether recent business graduates' current job titles were relevant to their degree positively predicted job satisfaction and affective organizational commitment. However, using the job analysis method, Friedland and Price (2003) failed to find a significant relationship between overeducation and job satisfaction after controlling for broader underemployment indicators (hours and pay underemployment). Similarly, using the indirect self-assessment

method, Maynard and colleagues (2015) failed to find a significant relationship between objective overeducation and job satisfaction. In terms of skill overqualification, several studies on the recently re-employed have found that skill overqualification negatively relates to job satisfaction and organizational commitment, and positively relates to turnover intentions and job searching (Feldman, Leana, & Bolino, 2002; McKee-Ryan et al., 2009). Importantly, however, both of these studies relied on the direct self-assessment method (i.e., providing a list of skills and asking respondents to indicate how much their current job utilizes each skill, when compared to their previous jobs). It is therefore plausible that these two studies assessed perceived skill overqualification more than objective skill overqualification.

**Health and Well-Being.** There is generally support for the idea that perceived overqualification negatively relates to health and well-being. Specifically, researchers have found that higher levels of perceived overqualification are associated with depression, stress (Johnson & Johnson, 1996; Johnson & Johnson, 1997), somatization (Johnson et al., 2002) and perceived health decline (Johnson & Johnson, 1999). One longitudinal study (Johnson & Johnson, 1999) found that perceived overqualification did not predict perceived health or perceived health decline two years later; however, the study suffered from significant attrition, and it is possible that the employees who reacted the most adversely to perceived overqualification were more likely to voluntarily leave their jobs and drop out of the study (the researchers did not provide an explanation for the significant attrition; nor did they test differences between the Time 1 only versus Time 1 and Time 2 groups on the focal variables of interest).

Although empirical findings on perceived overqualification and well-being are fairly consistent, the few studies conducted on objective overqualification and well-being outcomes

have produced contradictory results. Using the direct self-assessment method, researchers have linked overeducation to poorer life satisfaction (Nabi, 2003; Feldman & Turnley, 1995) and negative mood (Feldman & Turnley, 1995). However, using the job analysis method, Friedland and Price (2003) found that overeducation did not predict depressive symptoms, life satisfaction, positive self-concept, perceived health, or chronic disease after controlling for initial measures of these variables (hours and pay underemployment were also controlled for). In a similar vein, Maynard and colleagues (2015) used indirect self-assessment to measure overeducation and found that it did not have a significant bivariate relationship with career-related work stress.

### **Limitations to the Overqualification Literature**

The previous discussion highlights several key conceptual, theoretical and measurement-related issues in the overqualification literature. First, it is critical to gain a better understanding of the relationship between objective and perceived overqualification. A better understanding of this relationship will elucidate whether perceived overqualification is a simple mediator between objective overqualification and outcomes, or whether it operates independently (Maltarich, et al., 2011). Additionally, establishing that these two constructs are in fact distinct can potentially explain some of the contradictory findings in the literature. Finally, given that hiring decisions are necessarily based on more objective indicators of overqualification, it is troubling that the objective overqualification-perceived overqualification relationship remains virtually untested—particularly since the burgeoning literature on perceived overqualification largely continues to reinforce its harmful effects.

The issue of construct validity is closely related to another major issue in existing overqualification research: poor measurement. Inappropriate measurement and operationalization of various overqualification dimensions are widespread in the literature, making it difficult to

draw conclusions (McKee-Ryan & Harvey, 2011; Maltarich et al., 2011). In fact, a number of studies were excluded from review in the previous sections because they either combined measures of overqualification with broader underemployment indicators (e.g., Burke, 1997) or included items that are inconsistent with researchers' generally agreed-upon definition of overqualification (e.g., on a job's lack of growth opportunities, c.f. Bolino & Feldman, 2000; personal-job values congruence, c.f. Navarro, Mas, & Jimenez, 2010; or job control, c.f. O'Brien & Feather, 1990). At the most troubling extreme of the measurement issue, Anderson and Winefield (2011) point out that some researchers do not even provide an explanation of how underemployment/overqualification status was operationalized in their study. Clearly, weak or inconsistent measurement raises concerns about the interpretation of existing findings and further exacerbates the construct validity problem.

The debate surrounding the appropriate theoretical explanation for overqualification and its outcomes is also closely related to construct validity issues. Given that most researchers agree that objective overqualification and subjective overqualification are distinct, but related constructs, a broader, more integrative theoretical framework may be necessary to explain the differential relationships between the two types of overqualification and outcomes. Indeed, researchers seem to agree that P-J fit theory is particularly well-suited to explain the impact of objective overqualification, whereas relative deprivation theory is particularly useful in explaining the impact of perceived overqualification (e.g., Erdogan et al., 2011; Luksyte & Spitzmueller, 2011; Feldman, 2011; Liu & Wang, 2012). Studies that include both objective and perceived overqualification measures should incorporate the most relevant theory for each respective construct in an integrative framework, as opposed to a "one-theory-fits-all" approach. Although theoretical explanations should strive to be parsimonious, the persistent debate

suggests that no single theory is adequate to explain the complex, multifaceted phenomenon by which overqualification affects employees and organizations.

Finally, although this issue has not been raised previously, there is a need to explore individual moderators of the relationship between objective overqualification, perceived overqualification, and outcomes. Personality characteristics may influence the relationship between objective overqualification and perceived overqualification. In other words, there may be differences in how likely an individual is to “notice” the fact that they are objectively overqualified (Erdogan et al., 2011; Feldman, 2011). Individual differences may also influence how employees react to perceived overqualification. Although researchers are beginning to devote more theoretical attention to potential individual moderators of overqualification and its outcomes (e.g., Liu & Wang, 2012; Feldman, 2011), empirical investigations of potential boundary conditions are still lacking. This is an important area to address, as it will help identify the employees at greatest risk of feeling overqualified and experiencing its consequences.

Having provided an overview of the overqualification literature, I now discuss person-job fit theory and relative deprivation theory in greater detail, and use the tenets of these theories to develop hypotheses for the present study.

### **Person-Job Fit Theory**

Person-environment (P-E) fit theory posits that compatibility or congruence between the characteristics of individuals and their work environments positively influences the way individuals experience those environments (Kristof-Brown, Zimmerman, & Johnson, 2005; Feldman, 2011). Person-job (P-J) fit is a narrower type of P-E fit that refers to the congruence between an employee’s characteristics and the characteristics of the job or tasks performed at work (Kristof-Brown et al., 2005; Kristof, 1996). Edwards (1991) distinguished P-J fit into two

types: demands-abilities and needs-supplies. Demands-abilities fit refers to the congruence between the demands of a job and employee abilities to meet those demands (Edwards, 1991). Employee abilities refer to abilities in the traditional sense (i.e., aptitudes) as well as experience, education, knowledge, and skills (Edwards, 1991; Kristof-Brown et al., 2005). Needs-supplies fit involves the congruence between employee needs and the job supplies (i.e., job or task characteristics) available to meet those needs (Edwards, 1991). Employee needs can include individual desires, goals, values, interests, and preferences (Edwards, 1991). When compared to needs-supplies fit, demands-abilities fit is more consistent with the definition of overqualification as a situation in which employee education, experience, knowledge, skills, and abilities exceed job demands (Maynard & Parfyonova, 2013).

In their influential theoretical and meta-analytic review on workplace fit, Kristof-Brown and colleagues (2005) contend that perceived fit and objective fit are conceptually distinct constructs since perceived fit allows substantial cognitive manipulation in the process of appraising one's environment and thus reflects individual differences in the importance and salience of different features. At the same time, however, the authors argue that the objective environment should have at least some influence on individuals' perceptions, unless individuals are completely separated from reality. These arguments are consistent with the consensus among overqualification researchers that perceived overqualification and objective overqualification are distinct but related constructs. Accordingly, I propose the following hypothesis regarding the relationship between objective and perceived overqualification:

*Hypothesis 1: Objective overqualification will positively relate to perceived overqualification.*

## **Person-Job Fit and Strain**

A central tenet of person-environment fit theory is that incongruence between an individual and their environment causes a variety of psychological, physical, and/or behavioral strains, such as dissatisfaction, anxiety, and unhealthy behaviors (Edwards, 1993). The mismatch-strain proposition has been generally supported in the literature, as P-J fit has been found to relate to beneficial employee and organizational outcomes such as positive job attitudes, improved psychological and physical well-being, and reduced withdrawal behaviors (Kristof-Brown et al., 2005). In terms of demand-ability fit specifically, a meta-analysis by Kristof-Brown and colleagues (2005) found moderate-to-strong positive relationships with job satisfaction and organizational commitment, and a moderate negative relationship with strain.

P-E fit theorists have argued that strain outcomes are a direct consequence of perceived, rather than objective misfit (Edwards, 1996), and that objective misfit should have weaker relationships with outcomes since it is a more distal predictor that must be “filtered” through employee perceptions (Kristof-Brown et al., 2005). Since objective overqualification is a specific type of objective P-J misfit, P-E fit theory accordingly entails that its impact on job attitudes and physical and psychological well-being should be mediated by perceived overqualification. I therefore hypothesize the following:

*Hypothesis 2: The relationships between objective overqualification and job satisfaction will be mediated by perceived overqualification.*

*Hypothesis 3a-b: The relationships between objective overqualification and psychological distress (3a) and physical strain (3b) will be mediated by perceived overqualification.*

## **Relative Deprivation Theory**

Relative deprivation is a feeling of deprivation that occurs when individuals desire and feel entitled to possess an outcome, see that similar others have obtained the outcome, and view their failure to obtain the outcome as a consequence of external rather than internal factors (e.g., due to economic circumstances) (Crosby, 1976). In the overqualification and underemployment literature, relative deprivation has typically been operationalized using two dimensions of relative deprivation: desiring a better job and feeling deserving of a better job (Feldman et al., 2002; McKee-Ryan et al., 2009). Some researchers have also added the dimension of feeling angry or upset about one's job situation (e.g., Feldman & Turnley, 2004).

Relative deprivation theory is frequently used to explain the psychological impact of perceived overqualification, as feelings of relative deprivation can occur when employees find themselves in a job that fails to meet their desires and expectations. Erdogan and Bauer (2009) argue that individuals with more qualifications (i.e., education, experience, and KSAs) have greater expectations about the type of job they deserve and their place in society. Thus, perceived overqualification can trigger feelings of relative deprivation, which in turn leads to negative outcomes such as poorer job attitudes and increased withdrawal behaviors (Feldman et al., 2002; Erdogan & Bauer, 2009). Although the constructs are theoretically related, relative deprivation assesses broad, affective feelings that measure one's desire for and sense of entitlement to a better job, whereas perceived overqualification assesses perceptions of the extent to which one's qualifications exceed job demands. In support of the theorized perceived overqualification-relative deprivation link, McKee-Ryan and colleagues (2009) found moderate-to-strong positive relationships between perceived overqualification and two dimensions of relative deprivation (desiring a better job and feeling entitled to a better job). I therefore propose the following



hypothesis regarding the nature of the relationship between perceived overqualification and relative deprivation:

*Hypothesis 4: Perceived overqualification will positively relate to relative deprivation.*

It is also important to note the role of comparisons in creating feelings of relative deprivation. Relative deprivation theory suggests that employees use different referents (i.e., standards of comparison) when they evaluate their work situations, such as colleagues, previous work experience, or one's ideal self (Luksyte & Spitzmueller, 2011).

### **Relative Deprivation and Strain**

The concept of relative deprivation was originally developed to explain the role of comparisons in shaping individuals' job attitudes. Specifically, Stouffer, Suchman, DeVinney, Star, and Williams (1949) used the term "relative deprivation" to describe a phenomenon in which soldiers in units with higher and more rapid promotion rates were less satisfied with their promotion system than soldiers in units with fewer and slower promotion rates. Since these seminal findings, organizational researchers have consistently linked feelings of relative deprivation to negative job attitudes, including lower job satisfaction and organizational commitment and higher turnover intentions (Feldman & Turnley, 2004; Feldman et al., 2002; McKee-Ryan et al., 2009). Relative deprivation has also been found to negatively relate to organizational trust (Feldman et al., 2002). These findings are consistent with the idea that relative deprivation, by definition, involves individuals' judgments that their current situations are in some way inferior to other situations they desire and feel entitled to. Employees who make such judgments are likely to have strongly negative evaluations of their jobs. I therefore propose the following relationship between relative deprivation and job satisfaction:

*Hypothesis 5: Relative deprivation will negatively relate to job satisfaction.*

According to relative deprivation theory, feelings of relative deprivation involve negative emotions such as anger, dissatisfaction, and resentment, which can trigger symptoms of stress (Crosby, 1976). Feelings of relative deprivation can therefore be conceptualized as an emotional strain to a perceived stressor (i.e., being deprived) that in turn influences more distal well-being outcomes. In support of the hypothesized relationship between relative deprivation and reduced well-being, studies have found significant relationships between relative deprivation and negative emotions (Buunk & Janssen, 1992), depression (Keith & Schafer, 1985), burnout, and a reduced sense of purpose and meaning in life (van Dierendonck, Garssen, & Visser, 2005). Accordingly, I present the following hypotheses regarding the nature of the relationships between relative deprivation and psychological and physical well-being:

*Hypothesis 6a-b: Relative deprivation will positively relate to psychological distress (6a) and physical strain (6b).*

### **Mediating Effects of Relative Deprivation**

As discussed previously, feelings of relative deprivation are a likely consequence of perceived overqualification. It is important to note, however, that employees who perceive that they are overqualified may not always experience feelings of relative deprivation. Erdogan and colleagues (2011) note that employees may deliberately choose jobs for which they are overqualified for a variety of reasons, including the desire to have less a demanding job so that they can better accommodate nonwork responsibilities and interests, or because the job is deeply aligned with their values. In cases in which employees are aware that they are overqualified but do not feel deprived by their current employment situations (i.e., they do not desire or feel entitled to better jobs), negative job attitudes or reduced psychological and physical well-being are less likely to result. In other words, an employee believing that he or she is overqualified is

not, on its own, sufficient to result in adverse outcomes. The harmful effects of perceived overqualification are contingent upon volition, that is, whether or not the employee has actively chosen to be in a position for which they are overqualified for personal or professional reasons, or whether the employee feels helpless or otherwise involuntarily “stuck” in a position for which they are overqualified. I argue that this critical volitional element is appropriately captured by the extent to which employees who perceive themselves as overqualified desire and feel entitled to a better job (i.e., experience relative deprivation).

The previous discussion highlights why the negative consequences of perceived overqualification are determined by the extent to which employees feel relatively deprived in their job situations. Consequently, relative deprivation acts as a mediator in the relationships between perceived overqualification and outcomes. The idea that relative deprivation is the most proximal predictor of the negative outcomes of overqualification is similar to arguments made by other researchers (e.g., Feldman et al., 2002; McKee-Ryan et al., 2009; importantly, however, these researchers have proposed that relative deprivation mediates *objective* overqualification, not perceived overqualification). Accordingly, I present the following hypotheses regarding the mediating effects of relative deprivation on perceived overqualification and its outcomes:

*Hypothesis 7: The relationships between perceived overqualification and job satisfaction will be mediated by relative deprivation.*

*Hypothesis 8a-b: The relationships between perceived overqualification and psychological distress (8a) and physical strain (8b) will be mediated by relative deprivation.*

Hypotheses 1-8 summarize the anticipated relationships between the variables in the proposed model of overqualification, job dissatisfaction, and reduced well-being. In the next

section, I address individual differences that may influence several relationships in the hypothesized model.

### **Individual Moderators of Overqualification and Its Outcomes**

Researchers have argued that individual differences can affect overqualification and underemployment phenomena in a variety of important ways. For example, Feldman (2011) argues that personality theory should be used to elucidate how objective underemployment progresses into subjective underemployment, and to help explain individual reactions to underemployment. Similarly, Erdogan and colleagues (2011) argue that individual differences may moderate the relationships between objective overqualification and perceived overqualification, as well as the relationships between perceived overqualification and various negative outcomes.

The present study will test three stable individual differences as potential influences in the overqualification phenomenon: cognitive ability, negative affectivity, and achievement striving. Cognitive ability and negative affectivity will be tested as moderators of the relationship between perceived overqualification and relative deprivation. Achievement striving will be tested as a moderator of the relationship between objective overqualification and perceived overqualification. To the best of my knowledge, these relationships have not yet been tested.

#### **Cognitive Ability**

Cognitive ability is one of the most important predictors in determining individual outcomes in a variety of life domains, including the workplace (Gottfredson, 1997). General mental ability, commonly referred to as *g* or general intelligence, refers to the general ability to process information that enables complex higher-order thinking skills such as reasoning, decision making, and problem solving (Gottfredson, 1997). Cognitive ability has proved to be the

strongest and most consistent predictor of job performance across occupations. There is evidence that high-cognitive ability individuals desire more stimulating and challenging work (Ganzach, 1998), and actually pursue higher complexity jobs (Arvey, Abraham, Bouchard, & Segal, 1989; Wilk, Sackett, & Desmarais, 1995)

Researchers have argued that cognitive ability may operate as a protective factor against daily stressors and difficult life circumstances (e.g., Stawski, Almeida, Lachman, Tun, & Rosnick, 2010; Gottfredson, 1997). However, since high cognitive ability individuals seek and prefer jobs that are more challenging and stimulating, it is possible that they may find the experience of being unchallenged and bored at work more stressful and frustrating. Boredom is a negative affective state marked by low motivation and enthusiasm, and has been found to be associated with work dissatisfaction and strain (Loukidou, Loan-Clarke, & Daniels, 2009). There is also evidence that intelligent employees are more easily bored (Loukidou, Loane-Clarke, & Daniels, 2009).

Employees who are high in cognitive ability will likely experience greater boredom in response to unchallenging, routine work for which they are overqualified (i.e., work that does not adequately utilize their abilities). Indeed, Feldman (2011) argues that “boredom with the work itself is experienced constantly” and is difficult to repress. Amplified boredom and frustration among high cognitive ability employees who perceive that they are overqualified may therefore increase their likelihood of experiencing relative deprivation, which also involves feelings of dissatisfaction and frustration. Accordingly, I propose the following hypotheses regarding the moderating role of cognitive ability in the relationships between perceived overqualification and relative deprivation:

*Hypothesis 9: Cognitive ability will moderate the relationship between perceived overqualification and relative deprivation, such that there will be a stronger positive relationship between perceived overqualification and relative deprivation among individuals high in cognitive ability.*

### **Negative Affectivity**

Negative affectivity (NA) is a dispositional trait that reflects the tendency to experience negative emotional states such as anxiety, guilt, and anger over time, as well as the tendency to have a negative self-concept (Watson & Clark, 1984). Negative affectivity is postulated to intensify perceptions of (and reactions to) negative stimuli in the environment. More specifically, Watson and Clark (1984) argue that high NA individuals are more sensitive to the “minor failures, frustrations, and irritations of daily life, as evidenced by the likelihood, magnitude, and duration of their reactions.”

There is ample empirical support that NA relates to job stressors (e.g., Spector & O’Connell, 1994; Penney & Spector, 2005) and strains (Watson & Pennebaker, 1989). Negative affectivity may influence the relationship between job stressors and strains in multiple ways. One notable explanation for these relationships is that in any given situation, high NA individuals are more likely to experience a significant amount of distress (Watson and Pennebaker; 1984). This idea corresponds to what Spector, Zapf, Chen, and Frese (2000) define as the *hyper-responsivity* mechanism, which stipulates that high NA individuals are more sensitive to their environment and therefore experience exaggerated strain responses to stressors. The hyper-responsivity mechanism thus argues that NA interacts with job stressors and job strains, such that stressor-strain relationships are stronger among individuals high in NA (Spector et al., 2000).

Given its negative attitudinal, psychological, and behavioral outcomes, perceived overqualification is treated by many researchers as a job stressor (e.g., Liu & Wang, 2012). Indeed, in the broader P-E fit literature, misfit is frequently conceptualized as a job stressor (Yang, Che, & Spector, 2008). Furthermore, as noted in previous sections, relative deprivation can be conceptualized as a type of emotional strain, since desiring and feeling entitled to a better job entails feelings of frustration (Liu & Wang, 2012), resentment, and anger (Feldman & Turnley, 2004). The hyper-responsivity mechanism therefore entails that high NA individuals should be more likely to experience feelings of relative deprivation in response to perceived overqualification. This idea is similar to other researchers' arguments on how individual reactions to perceived overqualification might be influenced by negative affectivity (Johnson & Johnson, 2000) and neuroticism (Liu & Wang, 2012; Feldman, 2011). I thus present the following hypothesis regarding the moderating role of negative affectivity in the relationship between perceived overqualification and relative deprivation:

*Hypothesis 10: Negative affectivity will moderate the relationship between perceived overqualification and relative deprivation, such that the relationship between perceived overqualification and relative deprivation will be stronger among individuals high in negative affectivity.*

### **Achievement Striving**

Conscientiousness is a stable personality trait that involves both proactive aspects, such as achievement orientation and commitment, as well as inhibitive aspects, such as adherence to one's ethical principles and cautiousness (Costa & McCrae, 1991; Roberts, Chernyshenko, Stark, & Goldberg, 2005). Costa and McCrae (1991) argued for six particular facets of conscientiousness: dutifulness, orderliness, achievement striving, self-discipline, competence,

and deliberation (Costa & McCrae, 1991). Although there is debate about the lower-order facet structure of conscientiousness (Roberts et al., 2005), achievement is one of the narrow traits of conscientiousness that is generally agreed upon (Dudley, Orvis, Lebiecki, & Cortina, 2006). Achievement striving reflects individuals' motivation to achieve goals, pursue excellence, and strive for competence and success (Costa & McCrae, 1991; Dudley et al., 2006). High achievement strivers tend to be purposeful, diligent, and have a long-term sense of direction in life (Costa & McCrae, 1992). Meta-analytic findings indicate that achievement striving and industriousness (a compound trait of achievement striving and order) positively predict work dedication, job dedication, and job performance (Dudley et al., 2006; Roberts et al., 2005).

Perceived overqualification has consistently been found to relate to perceptions that a job lacks opportunities for growth or improvement (Johnson & Johnson, 1996; Johnson & Johnson, 1999). Given the importance that high achievement strivers place on excelling at their work, and their tendency to have a long-term sense of purpose and direction in their careers, high achievement strivers may be particularly attentive to how well their current job fits with their abilities and long-term career goals. As such, individuals high in achievement striving may be more likely to perceive that they are overqualified when their qualifications objectively exceed job demands. I therefore propose the following hypothesis regarding the moderating role of achievement striving in the relationship between objective overqualification and perceived overqualification:

*Hypothesis 11: Achievement striving will moderate the relationship between objective overqualification and perceived overqualification, such that the relationship between objective overqualification and perceived overqualification will be stronger among individuals high in achievement striving.*



Given that high achievement strivers tend to be goal-oriented and ambitious, it is important to explain why I do not argue that they will experience greater relative deprivation in the presence of perceived overqualification. For individuals high in achievement striving, perceiving their current job as inadequately utilizing their skills, abilities, and other qualifications is likely to conflict with their robust motivation to achieve. Indeed, Moon (2001) argues that high achievement strivers are strongly driven to avoid failure and perceiving themselves as failures. Given their tendencies to avoid failure and take initiative, achievement strivers may undertake active strategies in order to improve employment situations in which they feel overqualified. For example, high achievement strivers may initially respond to perceived overqualification by engaging in job crafting, which involves changing the task boundaries of a job (either physically or cognitively) and/or changing the relational boundaries of a job (Liu & Wang, 2012).

The relationship between high achievement striving and relative deprivation in the presence of perceived overqualification may therefore involve a number of contingencies. If high achievement strivers who perceive that they are overqualified still believe that they can improve their current job situation into one that is more challenging and suited to their qualifications (e.g., through job crafting), achievement striving might dampen the relationship between relative deprivation and perceived overqualification. On the other hand, if high achievement strivers who perceive that they are overqualified have already attempted to improve their job situations, but were unsuccessful (e.g., due to inflexible management), achievement striving might exacerbate the relationship between relative deprivation and perceived overqualification. Another possibility is that high achievement strivers who are overqualified may have deliberately chosen those jobs as part of larger career goals, given their proclivity for crafting and executing long-term plans. In this instance, there might be no moderating effect of high achievement striving on the

relationship between relative deprivation and perceived overqualification. While these questions are interesting avenues for future research, they are beyond the scope of the present study.

Therefore, no hypothesis is made regarding how achievement striving may influence the relationship between perceived overqualification and relative deprivation.

### **Alternative Models**

In addition to testing the proposed model outlined in Hypotheses 1-8, I also consider two alternative models. First, I consider an alternative model that adds direct paths from objective overqualification to job satisfaction and psychological and physical strain. Consistent with P-E fit theory (Kristof-Brown et al., 2005), I expect these direct relationships between objective overqualification and outcomes to be relatively weak since perceived overqualification is taken into account. However, given that objective overqualification is associated with broader underemployment indicators that can also negatively impact job attitudes and well-being, such as being underpaid, it is possible that this model may predict more variance in job satisfaction and physical and psychological strain than the focal proposed model. The second alternative model omits objective overqualification and specifies cognitive ability, achievement striving, and negative affectivity as antecedents of perceived overqualification. This model therefore holds that individual differences, as opposed to objective overqualification, are the primary influencers of perceived overqualification. I expect this model to fit the data more poorly than my focal model, since employee perceptions of overqualification should have some basis in reality and should not be driven solely by individual differences.

### **The Current Study**

The current study tests a hypothesized theoretical model that delineates the nature of the relationships between objective overqualification, perceived overqualification, and relative

deprivation, and explains how they mutually predict job dissatisfaction and reduced well-being. It also investigates several individual differences that may strengthen the relationships in the proposed model. The present study therefore intends to make several important contributions to the overqualification literature.

The most important contribution intended by the current study is insight into the extent to which perceptions of overqualification are grounded in reality (i.e., objective overqualification). Three dimensions of objective overqualification are examined: overeducation, cognitive ability overqualification, and skill overqualification. Overeducation and cognitive ability overqualification are assessed using job analysis; skill overqualification is assessed using a combination of job analysis and indirect self-assessment methods. Both job analysis and indirect self-assessment have advantages over the direct self-assessment method that has been predominantly used to measure dimensions of objective overqualification (Luksyte & Spitzmueller, 2011). Although measuring all possible dimensions of objective overqualification is beyond the scope of this study, an analysis of the relationship between perceived overqualification and three forms of objective overqualification marks an important step forward in understanding the nature of the relationship between these two constructs and their relative utility in predicting employee outcomes.

A second contribution intended by this study is to elucidate the respective roles of objective and perceived overqualification in predicting employee job satisfaction and well-being. Although recent review articles have suggested that job satisfaction (Liu & Wang, 2012) and well-being outcomes (McKee-Ryan & Harvey, 2012) have fairly well-established relationships with overqualification, the relationships are in fact far more ambiguous when the distinction between objective and perceived overqualification is considered. Job attitudes and well-being

outcomes therefore warrant reexamination as criteria of both objective and perceived overqualification.

A final contribution intended by this study is to determine whether cognitive ability, negative affectivity, and achievement striving operate as potential moderators of the relationships between overqualification and its outcomes. The processes of forming perceptions of overqualification and reacting negatively to those perceptions is likely subject to a number of individual boundary conditions. By investigating potential vulnerability factors that may increase the likelihood that employees perceive objective overqualification, or experience relative deprivation in light of those perceptions, this study aims to provide a more complete account of the negative effects of overqualification on job attitudes and well-being.

The current study uses a sample of recent college graduates, a population for whom overqualification is particularly relevant (Feldman & Turnley, 1995; Maynard & Parfyonova, 2013). Overqualification may be particularly problematic for college graduates because they are more likely than employed students or less educated employees to evaluate their current jobs in terms of their career goals and broader place in society (Maynard & Parfyonova, 2013; Erdogan & Bauer, 2009). Indeed, researchers have argued that new entrants in the job market, such as recent college graduates, may be particularly likely to experience relative deprivation (Feldman, 2011).

## **Chapter Two Method**

### **Participants and Procedure**

The sample consisted of 162 recent college graduates who had obtained a bachelor's degree in psychology from a large public university located in the Southeastern United States. This particular sample of recent college graduates is justified for a number of reasons. First, not all education is created equal (Erdogan et al., 2011). Comparing the impact of overeducation on college graduates from a diverse range of institutions may be inappropriate because the prestige of those institutions may play a role in how employees perceive their qualifications and current job situations. Similarly, the type of degree granted (i.e., major) may also influence how individuals perceive and react to overqualification. The present sample circumvented these concerns by holding the type of degree and granting institution constant.

Participants had to be at least 18 years of age and working in a full-time job (at least 30 hours per week) in order to participate in the study. This requirement controls for the effects of involuntary part-time employment, which is a broader type of underemployment that is beyond the scope of the present study. Additionally, participants had to have worked at their current jobs for at least three months, as a minimal amount of job tenure and job familiarity is necessary for employees to meaningfully rate some of the focal variables in the present study (e.g., perceived overqualification). Finally, full-time graduate students were not eligible to participate unless they reported working in a position other than a teaching assistantship, research assistantship, or fellowship, since such students have not technically entered the workforce.

Participants were recruited in two different ways. First, individuals who graduated between May 2012 and December 2013 were identified using an alumni contact list provided by the psychology department and invited to participate in the study via both email and physical mail. Of the 1,167 individuals contacted through this method, 138 participated in the survey (11.8% response rate). Although this total response rate is fairly low, it is possible that the effective response rate was higher, since mailing addresses were collected at the time of graduation and may have been outdated at the time of recruitment, and alumni may not have frequently used or checked the university email accounts through which they were contacted. Second, with the assistance of the psychology department, I sent recruitment emails to college seniors who had declared their intention to graduate during the Spring 2014 or Fall 2014 academic semesters. Students who were interested in participating in the study completed an online contact information survey in which they provided their name, email addresses, and expected graduation date. I then contacted them between four to six months following their expected graduation date. Thirty-six (36) of the 88 individuals contacted through this method participated in the study (40.9% response rate). It is important to note that a considerable number of individuals reached through both recruitment methods may have failed to meet the study's eligibility criteria, as they may have been working in a position with reduced hours, enrolled as full-time graduate students without other employment, or been unable to secure any form of employment after graduation.

Participants recruited through both methods received a letter and/or email informing them about the nature of the study, including my contact information if they had any questions. The message also contained the URL to the online survey, which was hosted by Qualtrics, if they met the eligibility criteria and wished to participate in the study. Informed consent information was

presented on the URL landing page, and participants were required to acknowledge it before proceeding to the survey. Responses to the survey were anonymous. Participants' contact information, which was required for compensation purposes, was collected in a separate survey that could only be accessed through a hyperlink embedded in the final page of the focal survey. Participants received a \$5.00 Starbucks' eGift or gift card as compensation.

A total of 174 completed survey responses were received. Three participants were eliminated for not having employment other than full-time graduate teaching assistantships. Five participants were eliminated for failing to pass at least three out of four quality control items designed to detect random responding. Finally, two surveys were eliminated due to evidence that they were duplicates (i.e., consecutively completed surveys with nearly identical responses, including open-ended questions and personal/demographic data). The final sample therefore included 162 participants.

The average age of participants was 24.27 years ( $SD=2.22$ ). The sample was mostly female (85.2%) and single (78.4%). Participants were ethnically diverse, with 68.5% identifying as Caucasian/White, 11.7% as African American, 11.1% as Latino/Hispanic, 3.7% as Asian, and 5% as another ethnicity or multiple ethnicities. The average length of time between participants' graduation date and the date they completed the study was 18.13 months ( $SD= 8.41$ ), with a maximum of 35.83 months. Participants were employed in a diverse range of occupations, with self-reported job titles such as "clinical case manager," "deputy sheriff," "certified nursing assistant," "licensed massage therapist," and "animal care technician." Participants reported an average job tenure of 13.4 months ( $SD= 12.38$ ) and organizational tenure of 20.36 months ( $SD= 19.25$ ). Finally, participants worked an average of 38.72 hours per week ( $SD= 4.96$ ).

## **Classification Into O\*NET-SOC Occupations**

In order to obtain objective measures of job characteristics, participants were classified into an occupation based on the Occupational Information Network (O\*NET)'s Standard Occupational Classification (SOC) taxonomy. O\*NET is a comprehensive, continually updated database of job characteristics and worker attributes that is sponsored by the U.S. Department of Labor (National Center for O\*NET Development, 2015). Data are collected in an ongoing process from both occupational experts and randomly sampled job incumbents. The O\*NET-SOC taxonomy was last revised in 2010 and currently consists of 976 occupations.

I classified participants' jobs into O\*NET-SOC occupations using three pieces of information: their self-reported job titles, their self-reported job industry according to the North American Industry Classification System (which is used in determining the O\*NET-SOC occupation code), and their self-reported O\*NET-SOC occupation. I first attempted to determine participants' O\*NET-SOC occupations by searching for their self-reported job titles in O\*NET's online "Find Occupations" tool (<https://www.onetonline.org/find/>). If I could not determine a participant's O\*NET-SOC occupation based on their self-reported job title alone, I also examined the industry and O\*NET-SOC occupation reported by participants themselves. Given that participants did not have access to detailed task descriptions for the O\*NET-SOC occupation they chose, and the fact that the titles of many related O\*NET-SOC occupations are similar, my classification was treated as final.

I was able to assign O\*NET-SOC occupations to 158 out of 162 participants. The remaining four participants provided job titles that were too nondescript to make a reliable O\*NET-SOC classification. Additionally, these four participants opted not to select their O\*NET-SOC occupation themselves, since all participants could select an option indicating that



“None of these occupations resemble my current job.” Among the 158 participants I was able to classify, 33 also indicated that none of the O\*NET-SOC occupations resembled their current job. Agreement was therefore calculated using the 125 participants that self-reported an O\*NET-SOC occupation. The O\*NET-SOC occupation I chose aligned with the participants’ chosen classification in 88 out of 125 cases (70.4%).

Participants’ O\*NET-SOC occupations were used to obtain objective ratings of job-level cognitive demands, skill demands, and education requirements. Although O\*NET data cannot provide context-specific information on a given individual’s job, O\*NET ratings of job characteristics have been found to converge with individual-level incumbents’ ratings (Liu, Spector, & Jex, 2005) and are frequently used in studies examining individual-level phenomena (e.g., Maltarich et al., 2011; Fisher et al., 2014). The use of O\*NET data is described in greater detail in the sections below.

## **Measures**

### **Objective Overqualification**

Objective overqualification was measured using three indicators: overeducation, skill overqualification, and cognitive ability overqualification. Treating these different facets as equally reflecting the objective overqualification construct is consistent with the definition of overqualification as a situation in which employees possess more education, experience, knowledge, skills, *and* abilities than required by their jobs. This point is underscored by Erdogan and colleagues (2011), who note that “a college graduate applying for a sales job requiring a high school degree may be overeducated, but they may not feel overqualified if they lack experience and abilities required by the job.” The next three sections describe the measurement of each of the three indicators of objective overqualification.

**Overeducation.** Overeducation was measured by calculating the difference between individuals' years of education to the typical years of education required by their current jobs, as rated by O\*NET or the U.S. Bureau of Labor Statistics (BLS). Specifically, for a given occupation, O\*NET provides the highest level of education obtained by a majority of incumbents in that occupation; this education level was then assigned a numeric value denoting the number of years typically required to attain that education level. O\*NET provided the modal education level possessed by job incumbents for 141 out of 158 O\*NET-SOC occupations. For the remaining 17 occupations, I used the BLS' 2014-2015 Occupational Outlook Handbook (<http://www.bls.gov/ooh/>) to look up the typical entry-level education required by the BLS' occupational equivalents of the O\*NET-SOC occupations. In order to ensure that the O\*NET ratings of modal education among job incumbents and the BLS ratings of typical entry-level education required by occupations could be combined, I coded both the O\*NET and BLS ratings for all participants' occupations. There was a high degree of convergence among the 138 occupations that had both types of ratings ( $r = .74, p < .01$ ), thus supporting the use of BLS ratings for the 17 occupations for which O\*NET did not provide data on required education level.

I determined the years of education associated with each education level using definitions provided by the U.S. Bureau of Labor Statistics (2013) as well as the coding procedure followed by Friedland and Price (2003). Specifically, occupations requiring a doctoral or professional degree were coded as requiring 19 years of education, occupations requiring a master's degree were coded as requiring 17.5 years of education, occupations requiring a bachelor's degree were coded as requiring 16 years of education, occupations requiring an associate's degree were coded as requiring 14 years of education, occupations requiring some postsecondary education but no degree, including postsecondary vocational training/certification,

were coded as requiring 13 years of education, occupations requiring a high school diploma were coded as requiring 12 years of education, and occupations requiring less than a high school diploma were coded as requiring 10 years of education. This method adheres to other researchers' conceptualization of overeducation as a continuous variable that should not be measured dichotomously (e.g., Luksyte & Spitzmueller, 2011).

The years of education completed by participants were determined using the same categories as above. Since all participants had completed their bachelor's degree, the minimum years of education among participants was 16. Additionally, participants were asked whether or not they had received any formal education since obtaining their bachelor's degree. If they answered yes to this question, they received a follow-up question asking them to explain the type of education they had received. I used their open-ended responses to assign them additional years of completed education. Participants who reported being enrolled in a graduate program or completing a vocational certification or award or were assigned an additional 1 year of education. Participants who specifically indicated that they had already completed a master's degree were assigned an additional 1.5 years of education. Overall, nearly a quarter of participants (23.5%) indicated that they had received formal post-baccalaureate education.

**Skill Overqualification.** Skill overqualification was operationalized as the difference between the sum of individuals' ratings of their competence in 35 skills and the sum of O\*NET ratings of the importance of those 35 skills to their occupations. O\*NET skills include 10 basic skills (e.g., writing), one complex problem solving skill, four resource management skills (e.g., time management), six social skills (e.g., persuasion), three systems skills (e.g., judgment and decision making), and 11 technical skills (e.g., troubleshooting). O\*NET provides a rating of the importance of each skill to a given occupation on a scale from 1 (*not important*) to 5 (*extremely*

*important*). More information about O\*NET skills can be found at <https://www.onetonline.org/find/descriptor/browse/Skills/>. Participants' skills were assessed via self-report. Specifically, they were presented with a description of each O\*NET skill and asked to rate their competency in each skill on a scale ranging from 1 (*This is not a skill of mine*) to 5 (*I am excellent at this skill*). O\*NET skills and descriptions can be found in Appendix A.

Interestingly, the distribution of participant's self-rated "skill supply" was shifted to the right of the distribution of O\*NET ratings of occupations' skill demands. In other words, participants reported having more skills, and greater competence in those skills, than O\*NET indicated was required, on average, by any given occupation. To illustrate, participants' average self-reported cumulative skills score was 118.97 (SD= 20.5), whereas the average O\*NET cumulative skill demands score across all occupations was 88.07 (SD= 8.73). The consequence of this distribution shift was that nearly all participants were skill overqualified to some degree (i.e., there were fewer near-zero scores indicating an approximate match between participants' skills and the skills demanded by their jobs, and fewer negative scores indicating skill underqualification). However, since skill overqualification was operationalized continuously and the discrepancy between self-reported skills and O\*NET-rated occupational skill demands appeared to be consistent across participants, I determined that the positive bias in skill overqualification scores would not impede my planned analyses, as higher scores still represent greater skill overqualification.

**Cognitive Ability Overqualification.** Cognitive ability overqualification was measured as the difference between participants' standardized SAT (critical reading and math) scores and standardized O\*NET ratings of the cognitive demands of their jobs. Participants' SAT scores were standardized to represent cognitive ability scores in the population of high school students

taking the test, which I argue roughly approximates the general population of the U.S. labor force; the procedure is described in greater detail in the “Cognitive ability” section below. Cognitive demands of the job were calculated by averaging O\*NET ratings of the importance of 21 cognitive abilities to an occupation (see Maltarich, Nyberg, & Reilly, 2010, for a similar approach). O\*NET cognitive abilities include elements such as inductive reasoning, number facility, and written comprehension, and are rated on a scale from 1 (*not important*) to 5 (*extremely important*). More information on O\*NET cognitive abilities is available at <https://www.onetonline.org/find/descriptor/browse/Abilities/1.A.1/>.

Average cognitive demands for participants’ occupations were standardized using the mean (2.99) and standard deviation (0.29) of the average cognitive demands of all occupations available in O\*NET. A positive score on cognitive ability overqualification thus indicates that an individual’s “supply” of cognitive ability (approximately relative to the general population) is greater than the cognitive demandingness of the job (relative to the cognitive demands of all occupations). A negative score, on the other hand, indicates that an individual’s standing on cognitive ability is lower than his or her job’s standing in cognitive demands.

### **Perceived Overqualification**

Maynard and colleagues’ (2006) nine-item Scale of Perceived Overqualification (SPOQ) was used to measure perceived overqualification. The scale assesses perceptions of having surplus education, experience, knowledge, skills, and abilities relative to one’s job. Response options were on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale demonstrated high reliability ( $\alpha = .91$ ). Items for the SPOQ are presented in Appendix B.

### **Relative Deprivation**

Relative deprivation was measured using three items from Feldman and Turnley (2004)

and one item developed for this study. To the best of my knowledge, the overqualification and underemployment literature lacks a well-established relative deprivation measure; researchers who have explicitly measured relative deprivation have often used self-developed items. In order to ensure that the three items used by Feldman and Turnley (2004) adequately captured the relative deprivation construct, I consulted with a subject matter expert (a doctoral student who specializes in overqualification). We developed an additional item in order to capture individuals' beliefs that they would be more satisfied with a different employment situation relative to their current one, since feeling of dissatisfaction between one's current and ideal jobs are central to the relative deprivation construct (Crosby, 1976). This dimension differs from job satisfaction in that it specifically anchors satisfaction with a current employment situation relative to an ideal employment situation, as described below.

Participants were asked to reflect on their own experiences, qualifications, and goals in answering the four questions, thus specifying the standard of reference as one's ideal self. Response options were on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale demonstrated high reliability ( $\alpha = .91$ ), and a principal axis exploratory factor analysis with direct oblimin rotation ( $\delta = 0$ ) extracted a one-factor solution (eigenvalue=3.04) that explained 76% of the variance in the four items. Items for the relative deprivation measure are presented in Appendix C.

### **Achievement Striving**

Achievement striving was measured with the ten-item achievement striving subscale from the International Personality Item Pool Representation of the NEO PI-R (IPIP-NEO; Goldberg, 1999). Participants rated how accurately each statement described them on a Likert

scale ranging from 1 (*very inaccurate*) to 5 (*very accurate*). The scale demonstrated adequate reliability ( $\alpha = .84$ ). Items for the achievement striving measure are presented in Appendix D.

### **Cognitive Ability**

SAT scores and American College Test (ACT) scores converted into SAT scores were used to measure cognitive ability. Both the SAT and ACT have been found to correlate highly with established measures of cognitive ability, indicating that both are acceptable measures of general intelligence (Frey & Detterman, 2004; Koenig, Frey, & Detterman, 2008). Furthermore, total SAT and ACT scores are typically highly related to each other, with Koenig and colleagues (2008) reporting a relationship of  $r = .87$ .

Participants were asked to report their combined math and critical reading score on the SAT or their composite ACT score, one of which is required for admission to their alma mater. Participants were also asked to report the year they graduated from high school for standardizing purposes. Accuracy of reporting was ensured in two ways. First, participants were given the option to opt out of this question if they could not remember their scores. Forty-six (46) participants chose this option. Second, participants were given directions on how to view their scores using an online transcript viewing resource provided for current and former students of public universities in the state (transcripts contain their SAT or ACT scores). One-hundred and sixteen (116) out of 162 participants (72%) reported an SAT or ACT score.

**Conversion Into Standardized SAT Scores.** Participants who reported composite ACT scores were assigned (total math and critical reading) SAT scores using concordance tables provided by College Board, the owner and publisher of the SAT. Participants' SAT scores were then standardized using the mean and standard deviation for all SAT test takers in their class cohort. This information was ascertained using annual data released by College Board of the

average scores of all high school seniors who took the SAT at any point during their high school years. Participants' standardized SAT therefore represents their cognitive ability relative to the general population of high school students who take the SAT.

**Representativeness of College Entrance Exams.** Although neither the SAT or ACT are taken by the entire population of high school seniors in the U.S., there is evidence that the population of SAT- and ACT-takers is increasingly approximating the general population of high school students, and by extension, the general population capable of participating in the U.S. labor force. A key factor in the growing representativeness of the SAT and ACT is the fact that a wider range of high school students now have greater access to these exams, and in many cases are required to take them. Indeed, since 2001, nearly half of the states in the U.S. have entered into some type of contract with the companies owning the SAT or ACT in order to boost testing participation (e.g., by offering the test for free and during school hours); approximately 14 of these states require high school students to take the SAT or ACT as part of a statewide achievement testing program (Adams, 2014; Teicher Khadaroo, 2015). As a result, overall testing numbers and participation by minorities and low-income students have surged for both the SAT and ACT in recent years (Lewin, 2013; Teicher Khadaroo, 2015). Given the increasing proportion and diversity of high school students taking college entrance exams, it is reasonable to treat standardized SAT scores as an approximate measure of cognitive ability among the general population of high school students, most of whom ultimately enter the work force (particularly if they graduate from high school and/or attend college; U.S. Bureau of Labor Statistics, 2014).

### **Negative Affectivity**

Trait negative affectivity was measured using the 10-item subscale from the Positive and



Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants were presented with 10 different descriptors (e.g., “irritable,” “upset”) and asked to indicate the extent to which they generally experience each mood state. Responses ranged from 1 (*very slightly or not at all*) to 5 (*extremely*). The scale demonstrated satisfactory reliability ( $\alpha = .88$ ). Items for the negative affectivity measure are presented in Appendix E.

### **Job Satisfaction**

Job satisfaction was measured with the three-item subscale from the Michigan Organizational Assessment Questionnaire (MOAQ; Cammann, Fichman, Jenkins, & Klesh, 1983). Participants indicated their responses on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale demonstrated high reliability ( $\alpha = .91$ ). Items for the job satisfaction measure are presented in Appendix F.

### **Psychological Distress**

Psychological distress was measured with five items of the psychological strain subscale from the 12-item General Health Questionnaire (GHQ-12; Goldberg & Williams 1991), which was developed to measure psychological strain related to anxiety and depression. Participants indicated their responses on a frequency scale from 1 (*never*) to 5 (*all the time*). The scale demonstrated high reliability ( $\alpha = .89$ ). Although the original subscale contains six items, the item about losing sleep was deleted due to overlap with an item on the PSI. Items for the psychological stress measure are presented in Appendix G.

### **Physical Symptoms**

Physical symptoms was measured with a shortened version of Spector & Jex’s (1998) Physical Symptom Inventory (PSI). Participants were asked how often they have experienced 13 different physical symptoms over the past month, such as trouble sleeping or a headache.

Responses were on a frequency scale ranging from 1 (*not at all*) to 5 (*every day*). The scale demonstrated adequate reliability ( $\alpha = .81$ ). Items for the physical symptoms measure are presented in Appendix H.

### **Demographics**

Participants were asked to report their age, gender, ethnicity, and marital status. They were also asked to report the month and year they graduated from college. Participants were asked a number of questions about their current jobs, including their job title, their O\*NET-SOC occupation (and NAICS job industry), how long they had worked in their position, how long they had worked at their current organization, and their average work hours per week. Finally, participants were asked whether they had completed any formal education since obtaining their Bachelor's degree. Demographic measures are presented in Appendix I.

### **Analytic Strategy**

The hypotheses in the current study were tested using correlation analyses, moderated regression, and structural equation modeling. Table 1 summarizes the analyses used to test each hypothesis. Mplus Version 7.0 (Muthén & Muthén, 1998-2012) was used to perform confirmatory factor analyses (CFAs) and structural equation modeling (SEM). In order to address missing data, robust full-information maximum likelihood estimation (MLR) was used for both the CFAs and SEM (Muthén & Muthén, 1998-2012). Full-information maximum likelihood estimation is considered an optimal strategy to address missing data in confirmatory factor analyses and SEM because it utilizes all available data from the full sample (Brown, 2015). Specifically, full-information maximum likelihood estimation uses raw data (instead of a variance-covariance matrix) to calculate a log-likelihood for each individual observation and then sums across the total cases for the overall sample log-likelihood, thus allowing for

differences in the number of variables or items across individuals (Graham & Coffman, 2012; Brown, 2015). The remaining analyses for this study were conducted in SPSS statistical software.

According to a power analysis, a sample size of approximately 300 would be necessary to have adequate power (.80) to detect a one-way interaction in a hierarchical regression analysis that predicts a small amount of incremental variance in the criterion ( $\Delta R^2 = .03$ ) while still keeping the significance level at the conventional value of .05 (Soper, 2015). Since the sample size is 162 in the present study, I raised my significance level to .10 for my moderated regression analyses in order to maximize power. This approach is consistent with the recommendations of Bing, LeBreton, Davinson, Migetz, and James (2007), who argue that the low power to detect moderating effects in field research warrants the use of a one-tailed test ( $p < .10$ ) of the significance of an interaction term when an a priori hypothesis has been made about the specific nature of the interaction. The significance level is .05 for all other analyses.

## **Chapter Three**

### **Results**

The results of this study are presented in three sections. First, I discuss the results of correlational analyses testing Hypotheses 1, 4, 5, and 6, which predict relationships between adjacent variables in the proposed model. In the next section, I discuss the SEM results of the proposed model and alternative models, and examine the mediating effects stipulated by Hypotheses 2, 3, 7, and 8. The third and final section presents the results of the moderated regression analyses used to test Hypotheses 9, 10, and 11.

#### **Correlational Analyses**

Descriptive statistics and reliabilities for all study variables are presented in Table 2, and Table 3 contains intercorrelations between all study variables. In order to create a composite objective overqualification variable, scores on skill overqualification, overeducation, and cognitive overqualification were standardized and summed.

Hypothesis 1, which stated that objective overqualification would positively relate to perceived overqualification, was supported ( $r = .54, p < .01$ ). Hypothesis 4 was also supported, as perceived overqualification positively related to relative deprivation ( $r = .53, p < .01$ ). Consistent with Hypothesis 5, relative deprivation had a robust negative relationship with job satisfaction ( $r = -.73, p < .01$ ). Finally, relative deprivation positively related to both psychological distress ( $r = .38, p < .001$ ) and physical symptoms ( $r = .24, p < .01$ ), thus supporting Hypothesis 8. Overall, all hypotheses regarding the relationships between adjacent variables in the hypothesized model were supported. Figures 1-5 depict scatterplots of these bivariate relationships.

Although they were not specifically hypothesized, a number of bivariate relationships between the study variables are worthy of note. As can be seen in Table 3, the relationship between relative deprivation and perceived overqualification ( $r = .53, p < .01$ ) was stronger than the relationship between relative deprivation and objective overqualification ( $r = .30, p < .01$ ) or any of its facets ( $r$ 's ranged from  $.17, ns$ , to  $.32, p < .01$ ). Additionally, only the relationship between job satisfaction and perceived overqualification was significant ( $r = -.38, p < .01$ ); job satisfaction did not significantly relate to objective overqualification ( $r = -.11, ns$ ) or any of its facets ( $r$ 's ranged from  $-.14$  to  $.04, ns$ ).

I re-ran these correlational analyses using only the subset of participants with scores on both objective and perceived overqualification ( $N=111$ ) as a first step in investigating whether there were significant differences between objective overqualification and perceived overqualification in their respective effect sizes with relative deprivation and job satisfaction. Importantly, the correlations found in the subset of 111 participants were virtually the same as the correlations found in the full sample. Specifically, for relative deprivation and perceived overqualification,  $r = .53 (p < .01)$ , for relative deprivation and objective overqualification,  $r = .30 (p < .01)$ , and the correlation coefficients between relative deprivation and the three objective overqualification facets ranged from  $.17 (ns)$  to  $.34 (p < .01)$ . Similarly, for job satisfaction and perceived overqualification,  $r = -.37 (p < .01)$ , for job satisfaction and objective overqualification,  $r = -.11 (ns)$ , and the correlation coefficients between job satisfaction and the three objective overqualification facets ranged from  $-.17 (ns)$  to  $.04 (ns)$ . Using software by Lee and Preacher (2013), which follows Steiger's (1980) approach, I performed a series of two-tailed asymptotic z-tests in order to compare dependent correlations. The results indicated that the relationship between relative deprivation and perceived overqualification was significantly greater than the

relationship between relative deprivation and objective overqualification ( $z= 2.9, p<.01$ ) or any of its facets ( $z$  values ranged from 2.62 to 3.72,  $p<.01$ ). Additionally, the relationship between job satisfaction and perceived overqualification was significantly greater than the relationship between job satisfaction and objective overqualification ( $z= -3.04, p<.01$ ) or any of its facets ( $z$  values ranged from -3.94,  $p<.01$ , to -2.418,  $p<.05$ ).

Both objective overqualification and perceived overqualification had a similar pattern of nonsignificant relationships with the two well-being variables. Specifically, neither perceived overqualification ( $r= .08, ns$ ) or objective overqualification ( $r= .09, ns$ ) or any of its facets ( $r$ 's ranged from -.12 to .13,  $ns$ ) had significant relationships with psychological distress. Similarly, neither perceived overqualification ( $r= .04, ns$ ) or objective overqualification ( $r= .01, ns$ ) or any of its facets ( $r$ 's ranged from -.05 to .01,  $ns$ ) had significant relationships with physical symptoms. Finally, of the various overqualification dimensions, only skill overqualification had significant relationships with personality variables, demonstrating both a positive relationship with achievement striving ( $r= .32, p<.01$ ) and a negative relationship with negative affectivity ( $r= -.16, p<.05$ ).

## **Model Testing**

### **Confirmatory Factor Analyses**

In order to assess the extent to which the indicators of the self-report measures to be used in the structural equation model fit their hypothesized latent constructs, I first performed a six-factor CFA on perceived overqualification, relative deprivation, job satisfaction, psychological distress, and physical strain. Fit indices for this six-factor model failed to meet commonly-used criteria of acceptable fit,  $\chi^2(517)= 918.613, p<.001$ , CFI= .86, TLI= .84, RMSEA= .069 [90% CI: .062, .076] (Hu & Bentler, 1999). An examination of residual variance and covariances and

factor loadings indicated two potential sources of misspecification: the perceived overqualification scale (SPOQ) and the physical symptoms inventory (PSI).

I first addressed misfit with the SPOQ. In their original article introducing and presenting validity evidence on the SPOQ, Maynard and colleagues (2006) encountered similar issues regarding the scale's factor structure. Specifically, although the results of principal components analyses across two studies indicated that one factor explained most of the variance in the nine items, a three-factor CFA model fit the data better than a one-factor model. The authors still maintained that the high internal consistency of the scale, along with the results of the two PCAs, warranted its use as a unidimensional measure. As can be seen in Appendix B, however, three dimensions clearly emerge from the nine items of the SPOQ: three items assess excess education, three items assess excess KSAs (i.e., knowledge, skills, and abilities), and three items assess excess experience and training. It is therefore possible that a higher-order model with three first-order factors for each dimension best fits the SPOQ, particularly given the strong internal consistency found among the items in this study ( $\alpha = .91$ ) and in Maynard and colleagues' (2006) three studies ( $\alpha$  ranged from .89 to .92).

Since the SPOQ is used as a unidimensional scale in the literature, and establishing the appropriate factor structure of the SPOQ is beyond the scope of the present study, I chose to address this issue by creating three-item parcels for each dimension of the SPOQ: overeducation, excess KSAs, and overexperience. The score for each parcel was calculated by taking the average score of the three items assigned to it. This strategy is referred to as domain-representative or facet-representative parceling (Little, Cunningham, Shahar & Widaman, 2002; Little, Rhemtulla, Gibson, & Schoemannand, 2013). Facet-representative parceling is appropriate when researchers are interested in modeling a general latent factor and the effects of lower-level

facets are not of substantive theoretical interest (Little et al., 2002; Little et al., 2013), as is the case in the present study.

I next addressed misfit with the physical symptoms inventory (PSI; Spector & Jex, 1998). Factor loadings were generally low, with all loadings below .7 and several loadings in the .2 and .3 range. These results were confirmed by examining item-total correlations from a traditional item-analysis. However, I was hesitant to delete these items, as the PSI is a well-established measure. After reviewing the original scale development article (Spector & Jex, 1998), I determined that parceling was an appropriate way to address low reliability among these items. Per Spector and Jex (1998), the PSI is in fact a multidimensional scale: its items are considered to be indicators of distinct but related constructs. Parceling is therefore a reasonable way to address its multidimensionality, since again, my present research questions involve assessing this construct at a general level (Little et al., 2002).

I chose to follow a correlational parceling strategy in order to address the multidimensionality of the PSI, since its lower-order dimensions are not as evident *a priori* as with the SPOQ dimensions. The correlational parceling strategy involves assigning items with the highest intercorrelations to the same parcel (Little et al., 2013). Using this criteria, I created two four-item parcels and one five-item parcel. I found that this correlational strategy in fact resulted in parcels with broadly interpretable dimensions. For example, the PSI items on an upset stomach or nausea, acid indigestion or heartburn, diarrhea, stomach cramps (not menstrual), and loss of appetite were assigned to the same parcel and collectively appeared to capture a dimension concerning digestive issues.

Importantly, both the correlational strategy and the facet-representative strategy have been argued to be a justifiable means of addressing multidimensionality using parceling



techniques, particularly when lower-order dimensions of a factor are not of theoretical interest (Little et al., 2013). Furthermore, given that these parcels generally behave like a facet, there is evidence that they result in the least biased parameter estimates, and models that employ them have been found to remain sensitive to misspecification (Little et al., 2013). Although there is of course still debate about the appropriateness of using parceling (Marsh, Lüdtke, Nagengast, Morin, & Von Davier, 2013), researchers have argued that latent variable models with parcels are almost always preferable to using total scale scores in path analysis models, since the latter have been found to produce more biased parameter estimates (Coffman & MacCallum, 2005).

Fit was substantially improved in the revised six-factor CFA,  $\chi^2(125)= 218.53, p<.001$ , CFI= .95, TLI= .93, RMSEA= .068 [90% CI: .053, .083]. Factor loadings across the seven scales ranged from .62-.94, with most in the .7-.9 range. Having obtained evidence that my self-report measures adequately fit their hypothesized latent constructs, I proceeded to the next stage of analyses.

### **Hypothesized Model**

To test the hypothesized model, the original (unstandardized) overeducation, skill overqualification, and cognitive ability overqualification scores were specified as indicators of objective overqualification, and the six measures from the CFAs were specified as endogenous latent variables. The hypothesized structural equation model fit the data reasonably well,  $\chi^2(184)= 376.93, p<.001$ , CFI= .90, TLI= .89, RMSEA= .08 [90% CI: .069, .092]. The paths between the latent variables corroborated the results of the correlation analyses, with objective overqualification significantly predicting perceived overqualification ( $\gamma= .61, p<.001$ ), perceived overqualification significantly predicting relative deprivation ( $\beta= .58, p<.001$ ), and relative

deprivation negatively predicting job satisfaction ( $\beta = -.77, p < .001$ ) and positively predicting psychological distress ( $\beta = .39, p < .001$ ) and physical symptoms ( $\beta = .33, p < .001$ ).

Mplus uses the multivariate delta method for calculating the significance of indirect effects (MacKinnon, 2008), which is similar to the Sobel method. There was a negative and significant indirect effect of objective overqualification on job satisfaction through perceived overqualification and relative deprivation ( $-.27, p < .001$ ), thus supporting Hypotheses 2 and 7. Consistent with Hypotheses 3 and 8, objective overqualification also had positive and significant indirect effects on both psychological distress ( $.14, p < .001$ ) and physical symptoms ( $.12, p < .01$ ) through perceived overqualification and relative deprivation. The results therefore supported all mediating pathways specified in the proposed model. Figure 1 contains the SEM results of the hypothesized model.

### **Alternative Models**

I first tested the alternative model without objective overqualification, in which cognitive ability, negative affectivity, and achievement striving were specified as antecedents of perceived overqualification. Since there was only one item for cognitive ability (i.e., standardized SAT score), I treated all three individual difference variables as observed. This model fit the data poorly,  $\chi^2(182) = 411.54, p < .001$ , CFI = .82, TLI = .80, RMSEA = .104 [90% CI: .091, .118], suggesting that the focal model should be preferred.

I next tested the alternative model that added direct paths between objective overqualification and job satisfaction, psychological distress, and physical symptoms. Since the hypothesized model constrains these three paths to zero, it can be considered nested within this alternative model, which freely estimates these paths. Model fit was similar to the proposed model except for small decrements in the  $\chi^2$  and RMSEA values,  $\chi^2(181) = 365.03, p < .001$ , CFI =

.90, TLI= .89, RMSEA= .079 [90% CI: .067, .091]. I tested the difference between these two nested models using the SB- $\chi^2$  scaled difference test (Satorra & Bentler, 2001; Byrne, 2012). The results indicated that the alternative model with direct paths between objective overqualification and outcomes fit the data better than the focal proposed model,  $T_d(3) = 11.17, p < .05$ . As can be seen in Figure 2, the significance and direction of all the paths found in the focal model remained the same in this alternative model, although they were slightly stronger than in the focal model. Similarly, all the indirect effects found in the alternative model were the same, albeit slightly stronger, as in the focal model, with objective overqualification having a significant negative indirect effect on job satisfaction ( $-.32, p < .001$ ) and a significant positive indirect effect on psychological distress (.18,  $p < .001$ ) and physical symptoms (.16,  $p < .01$ ). The results of this alternative model therefore maintain support for Hypotheses 2, 3, 7, and 8. Additionally, as with the focal model, the direction and significance of the paths between adjacent variables in this alternative model complement the results of the correlational analyses supporting Hypotheses 1, 4, 5, and 6.

However, an unexpected pattern emerged with the direct paths between objective overqualification and job satisfaction and physical distress. Recall my earlier suggestion that these direct relationships would be negative, since objective overqualification is associated with broader underemployment indicators that can potentially harm job attitudes and well-being through other mechanisms. The direct paths in this alternative model suggested precisely the opposite: that is, the direct path between objective overqualification and job satisfaction was *positive* ( $\gamma = .18, p < .05$ ) and the direct path between objective overqualification and physical symptoms was *negative* ( $\gamma = -.25, p < .05$ ). The direct path between objective overqualification and psychological distress failed to reach significance, although it was in the same negative direction

as physical symptoms ( $\gamma = -.21, p = .10$ ). This unexpected pattern may indicate the presence of suppression. Suppression effects in mediation, also referred to as “inconsistent mediation effects,” occur when a mediator conceals the nature of the relationship between an independent and dependent variable, such that the relationship between the independent and dependent variable is smaller or in the opposite direction when the mediator is not controlled for (Cheung & Lau, 2008; MacKinnon, Krull, & Lockwood, 2000).

Although the results of SB- $\chi^2$  scaled difference testing indicated that the best-fitting model was one in which objective overqualification had both direct and indirect effects on job satisfaction, psychological distress, and physical symptoms, the principle of parsimony suggests favoring the originally proposed model without the direct effects of objective overqualification, as the original model has a theoretical basis and nearly identical fit statistics apart from the  $\chi^2$ . Table 4 contains model fit statistics for the proposed model and the two alternative models.

### **Moderated Regression Analyses**

Results from a moderated regression analysis indicated that the interaction between cognitive ability and perceived overqualification in predicting relative deprivation was not significant ( $\Delta R^2 = .017, ns$ ). Hypothesis 9 was therefore not supported. Results from a second moderated regression analysis indicated that negative affectivity did not moderate the relationship between perceived overqualification and relative deprivation ( $\Delta R^2 = .001, ns$ ), thus failing to support Hypothesis 10. Of the three moderated regression analyses, this analysis was the only one with complete data ( $N = 162$ ). A final moderated regression analysis was performed to investigate the hypothesized role of achievement striving in strengthening the relationship between objective overqualification and perceived overqualification. The moderating effect failed to reach significance ( $\Delta R^2 = .016, ns$ ), thus failing to support Hypothesis 11. Tables 5-7

contain the results of the moderated regression analyses for cognitive ability, negative affectivity, and achievement striving.

## Chapter Four Discussion

The present study sought to propose and test a new model of overqualification, job satisfaction, and well-being. A key goal of this investigation was to examine the extent to which employees' perceptions of being overqualified are grounded in objective indicators of overqualification, which has long remained a critical open question in the literature. Consistent with expectations in this study, and among overqualification researchers more generally, objective overqualification and perceived overqualification were positively related; employees' perceptions of being overqualified therefore do appear to have some basis in reality. At the same time, however, the effect size found in the present study ( $r = .54$ ) implies that these two constructs each possess a substantial degree of unique variance. Indeed, the results of structural equation modeling indicated that 63% of the variance in the latent perceived overqualification construct was unexplained by objective overqualification as conceptualized and measured in this study.

The distinctiveness of objective overqualification and perceived overqualification is further evinced by the unique patterns of relationships they demonstrated with relative deprivation and job satisfaction. Specifically, only perceived overqualification negatively related to job satisfaction ( $r = -.38$ ), and the magnitude of the effect size between perceived overqualification and relative deprivation ( $r = .53$ ) was significantly larger than the effect size found between objective overqualification and relative deprivation ( $r = .30$ ). These findings are consistent with a study by Spector and Jex (1991), which compared ratings of job characteristics

from incumbents, independent raters, and the Dictionary of Occupational Titles (DOT; U.S. Department of Labor, 1965) and found that only incumbent ratings predicted incumbents' job satisfaction and turnover intentions. Interestingly, among the four strain variables examined in this study, differences in effect sizes between objective and perceived overqualification were only found with the two variables involving negative job appraisals; both objective overqualification and perceived overqualification had similarly weak and nonsignificant positive relationships with psychological distress and physical symptoms. These differences and similarities in relationships with strain variables also have important implications for the proposed theoretical model, as I discuss shortly.

Another goal of this study was to clarify the respective roles of objective and perceived overqualification in predicting job dissatisfaction and reduced well-being. The results of structural equation modeling indicated that the relationships between study variables were consistent with the relationships delineated in the proposed theoretical model, which holds that objective overqualification predicts job dissatisfaction and greater physical and psychological strain first through perceived overqualification, which in turn predicts these negative outcomes through the mediating effects of relative deprivation. Importantly, however, the patterns of bivariate relationships found in this study imply that the mechanisms proposed herein do not fully capture the complex relationships between objective overqualification, perceived overqualification, job satisfaction, and physical and psychological strain.

First, the findings that perceived overqualification negatively relates to job satisfaction, but objective overqualification does not, suggests the existence of other influences on perceived overqualification that I did not measure in this study. For example, dissatisfied employees may experience more relative deprivation, which in turn influences the magnitude of discrepancy they

perceive between their qualifications and the demands of their jobs. This explanation entails that the proposed direction of effects predicting job satisfaction actually occur in reverse to predict perceived overqualification. Another possibility is that the effects on perceived overqualification occur in both directions, such that both objective overqualification and job dissatisfaction mutually influence perceived overqualification. Such bidirectional influences are particularly plausible given the significant relationship between objective overqualification and relative deprivation ( $r = .30$ ).

Second, the observed pattern of relationships in this study might seem to suggest that the proposed theoretical model is appropriate for predicting well-being outcomes, even if it may not completely explain the relationships between objective overqualification, perceived overqualification, and job attitudes. After all, neither perceived overqualification nor objective overqualification had significant zero-order correlations with psychological distress or physical symptoms, but the results from structural equation modeling were consistent with the hypothesis that both forms of overqualification indirectly influence well-being outcomes through the mediating role of relative deprivation. Before drawing such a conclusion, however, this explanation should also be weighed against a potential alternative. Specifically, given the potential bidirectional relationship between perceived overqualification and job satisfaction outlined above, job dissatisfaction may in fact be responsible for the positive indirect effect of perceived overqualification on psychological distress and physical strain. In other words, employees who are unhappy with their jobs may experience greater relative deprivation and therefore make heightened judgments about the extent to which they are overqualified for their jobs, which in turn intensifies feelings of relative deprivation and ultimately reduces well-being outcomes in a kind of “closed-loop” feedback system.



Overall, it is important to consider the possibility that objective overqualification may not always manifest in poor job attitudes or reduced well-being, which may account for its nonsignificant correlations with the three outcome variables in this study. In other words, a “cancelling-out” effect may be occurring in which the portion of objective overqualification that overlaps with perceived overqualification relates to poor outcomes, and the portion of objective overqualification that is unrelated to perceived overqualification relates to more positive outcomes. For example, some objectively overqualified employees may have chosen jobs that deeply align with their values (Erdogan et al., 2011), and therefore do not consider themselves overqualified for those jobs despite the fact that they objectively are. As such, being employed in personally meaningful and intrinsically rewarding jobs may create positive job attitudes and foster greater well-being among these employees. Similarly, objectively overqualified employees who do not perceive themselves to be overqualified may receive beneficial effects from the social and psychological rewards associated with superior performance on jobs that these individuals do not consider “beneath” them. For example, overqualified, highly-performing employees may receive positive reinforcement from their supervisors and experience greater professional self-efficacy and a sense of mastery, all of which could positively influence their job satisfaction and well-being. Again, these potentially positive effects of objective overqualification may negate its potentially negative effects, thus accounting for its nonsignificant relationships with outcome variables in the present study.

A final goal of this study was to examine potential individual differences that might increase susceptibility to the negative effects of overqualification, as outlined in the proposed model. Contrary to predictions, individuals high in cognitive ability did not experience heightened relative deprivation when perceived overqualification was high. I also did not find

evidence for my hypothesis that high achievement strivers are more likely to perceive themselves as overqualified when they objectively are. These two nonsignificant results should be interpreted with caution, however, as there were notable amounts of incremental variance associated with each interaction ( $\Delta R^2 = .017$  and  $\Delta R^2 = .016$ , respectively). Finally, contrary to expectations, I found that trait negative affectivity did not exacerbate the relationship between perceived overqualification and relative deprivation. Among the three moderators tested, the analysis with negative affectivity had the greatest statistical power ( $N = 162$ ) and predicted the smallest amount of incremental variance in the criterion ( $\Delta R^2 = .001$ ), thus providing greater confidence in these results. These findings challenge the notion that individuals high in negative affectivity or neuroticism are likely to have particularly severe reactions to perceived overqualification (e.g., Feldman, 2011). Instead, it appears that individuals who perceive themselves as overqualified tend to react negatively to their jobs (i.e., feel relative deprivation) regardless of whether or not they are predisposed to experience negative affective states.

### **Implications**

This study has important implications for the overqualification literature. First, and most notably, the results of this study suggest that objective overqualification and perceived overqualification are appropriately conceptualized as related but distinct constructs. This is a significant contribution, as the lack of clarity regarding the objective-perceived overqualification relationship has long hampered theoretical and empirical development in the field (Feldman, 2011; Maltarich et al., 2011). Although the present study supports the general consensus that perceptions of overqualification likely have some basis in reality, the results also indicate that studies that only consider employee perceptions of overqualification are omitting an indispensable part of the picture of what it means to be objectively overqualified and

incorporating a number of nebulous, poorly-understood factors that appear to shape overqualification perceptions. Furthermore, since objective overqualification and perceived overqualification are far from redundant and have distinct patterns of relationships with the criteria variables in this study, the present findings imply that objectively overqualified employees do not necessarily consider themselves to be overqualified or experience negative outcomes as a result of those perceptions. These results speak to the complexity of the relationships between objective overqualification, perceived overqualification, and criteria of interest, and strongly suggest that the term “overqualified” should not be used as a “catch-all” term to describe both objective and perceived overqualification. Accordingly, researchers should be cautious of the fact that employees’ perceptions of overqualification reflect substantially more than objective aspects of being overqualified, and may especially capture dissatisfaction with elements of the job that are unrelated to objective demands-abilities misfit.

### **Limitations and Suggestions for Future Research**

The findings and contributions of this study should be considered in light of several limitations. One limitation is the cross-sectional nature of the data. Although the theoretical model advanced in this study specifies causal relationships between variables, it is important to note that reverse causality is possible, particularly with the strain variables. As previously noted, perceptions of overqualification may be capturing elements of dissatisfaction with the job that are unrelated to objective demands-abilities misfit. Consequently, job dissatisfaction and relative deprivation may influence one another and jointly predict employees’ perceptions of overqualification. These three variables may also influence each other bidirectionally. Similarly, job dissatisfaction may indirectly increase psychological and physical strain by heightening feelings of relative deprivation and ultimately perceived overqualification, which may in turn

magnify feelings of relative deprivation and reduce well-being. Future research employing longitudinal designs is necessary to establish temporal precedence between objective overqualification, perceived overqualification, and strain outcomes, and investigate whether the direction of effects is consistent with the causal sequence hypothesized in the present study or better coheres with an alternative explanation.

Another limitation of this study is that it was not possible to measure all dimensions of objective overqualification. Although assessing three dimensions of objective overqualification is an important step forward in understanding the objective overqualification construct, future research should also incorporate the dimensions of objective overexperience and excess knowledge, both of which were not measured in this study. One possible avenue for gaining this data is through supervisor reports or human resources personnel (e.g., Liu et al., 2015).

Finally, a significant limitation of this study is the fact that its tests of individual moderators were underpowered, especially for the hypotheses involving cognitive ability ( $N= 116$ ) and achievement striving ( $N= 111$ ). It is therefore possible that the moderating role of cognitive ability in the relationship between perceived overqualification and relative deprivation was underestimated; similarly, the nonsignificant interaction between achievement striving and objective overqualification in predicting perceived overqualification should be interpreted with caution. Future research should re-examine these relationships with a greater sample size in order to draw firmer conclusions.

A key recommendation for future research is to carefully consider the roles of both perceptions and the reality of overqualification in forming and answering research questions. Indeed, the results of this study demonstrate that researchers otherwise risk creating an oversimplified and potentially misleading picture of objectively overqualified employees, who

may not necessarily consider themselves to be overqualified or experience negative outcomes as a result of those perceptions. These concerns are especially salient in light of the fact that hiring decisions are necessarily based employees' objective qualifications (Erdogan et al., 2011; Maltarich et al., 2011). As such, the present findings should compel future researchers to employ a more comprehensive and nuanced approach of investigating and discussing overqualification phenomena than is typical in most existing studies.

Another important avenue for future theoretical and empirical research is to investigate whether objective overqualification is indeed associated with greater job satisfaction and well-being among employees who do not perceive themselves to be overqualified, and if so, the mechanisms accounting for this positive association. The previous discussion already highlighted two potential mechanisms; others may exist as well. By facilitating knowledge of the circumstances in which objectively overqualified individuals do not judge themselves as being overqualified, such research could also provide insight into the process through which individuals come to perceive themselves as being overqualified, which is currently an open question (Feldman, 2011). Indeed, the results of this study attest to the importance of obtaining a clearer understanding of the factors that influence employees' perceptions of overqualification.

Finally, it is important for future research to continue examining potential boundary conditions of objective overqualification and perceived overqualification, both at the individual and work-group level. For example, Hu and colleagues (2014) found that employees who perceived that they were overqualified found their work more meaningful and significant, and perceived better fit with their work groups, when the average level of perceived overqualification reported by their peers was also high. In general, it would be useful to find more individual and group-level moderators that could potentially ameliorate the association between perceived

overqualification and strain, including feelings of relative deprivation. Additionally, it is important for future research to continue exploring individual- and group-level moderators that increase or mitigate the likelihood that objective overqualification manifests in perceived overqualification.

## **Conclusion**

This study provides critical insight into the conceptual nature of overqualification and helps elucidate the respective roles of objective overqualification and perceived overqualification in predicting employee job satisfaction and well-being. As hypothesized, objective overqualification and perceived overqualification were distinct but related constructs, and the results from structural equation modeling were consistent with a theoretical model in which objective overqualification predicts job dissatisfaction and physical and psychological strain through the mediating roles of both perceived overqualification and relative deprivation. However, the unique patterns of relationships demonstrated by objective overqualification and perceived overqualification with strain outcomes suggest that objective overqualification may not always manifest in negative outcomes, and that the relationships between objective overqualification, perceived overqualification, and strain variables may be more complex than delineated in the proposed model. Finally, there was insufficient evidence for the hypothesized individual moderator effects. Overall, the results of the present study highlight the importance of distinguishing objective overqualification from perceived overqualification, and suggest that devoting greater attention to the factors that influence these two constructs and their respective roles in predicting employee outcomes is essential to the development of the overqualification literature and the soundness of the conclusions drawn from it.

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## Tables

Table 1. Hypotheses and Statistical Analyses

Hypothesis 1	Objective overqualification will positively relate to perceived overqualification.	Correlation
Hypothesis 2	The relationships between objective overqualification and job satisfaction will be mediated by perceived overqualification.	Structural equation modeling
Hypothesis 3	The relationships between objective overqualification and psychological distress (a) and physical strain (b) will be mediated by perceived overqualification.	Structural equation modeling
Hypothesis 4	Perceived overqualification will positively relate to relative deprivation.	Correlation
Hypothesis 5	Relative deprivation will negatively relate to job satisfaction.	Correlation
Hypothesis 6	Relative deprivation will positively relate to psychological distress (a) and physical strain (b).	Correlation
Hypothesis 7	The relationships between perceived overqualification and job satisfaction will be mediated by relative deprivation.	Structural equation modeling
Hypothesis 8	The relationships between perceived overqualification and psychological distress (a) and physical strain (b) will be mediated by relative deprivation.	Structural equation modeling
Hypothesis 9	Cognitive ability will moderate the relationship between perceived overqualification and relative deprivation, such that there will be a stronger positive relationship between perceived overqualification and relative deprivation among individuals high in cognitive ability.	Moderated regression
Hypothesis 10	Negative affectivity will moderate the relationship between perceived overqualification and relative deprivation, such that the relationship between perceived overqualification and relative deprivation will be stronger among individuals high in negative affectivity	Moderated regression
Hypothesis 11	Achievement striving will moderate the relationship between objective overqualification and perceived overqualification, such that the relationship between objective overqualification and perceived overqualification will be stronger among individuals high in achievement striving.	Moderated regression

Table 2. Descriptive Statistics and Reliabilities

Variable	Mean	SD	Coefficient Alpha
Objective Overqualification	0.09	2.47	0.74
Overeducation	2.09	2.24	-
Skill overqualification	30.81	22.01	-
Cognitive overqualification	0.86	1.08	-
Perceived Overqualification	3.49	1.00	0.91
Relative Deprivation	3.55	1.08	0.91
Achievement Striving	4.38	0.48	0.84
Cognitive Ability	0.77	0.66	-
Negative Affectivity	1.82	0.66	0.88
Job Satisfaction	3.51	0.78	0.91
Psychological Distress	2.44	0.92	0.89
Physical Symptoms	1.91	0.52	0.81

*Notes:* Objective overqualification was measured as the sum of sample-standardized cognitive ability overqualification, skill overqualification, and overeducation scores. Coefficient alpha for objective overqualification was calculated using the three standardized facets. Cognitive ability scores are SAT scores standardized to the population of test takers the year participants took the test.

Table 3. Intercorrelations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Objective Overqualification	-											
2. Overeducation	.84**	-										
3. Skill overqualification	.77**	.43**	-									
4. Cognitive ability overqualification	.82**	.61**	.39**	-								
5. Perceived Overqualification	.54**	.54**	.32**	.34**	-							
6. Relative Deprivation	.30**	.32**	.17*	.17	.53**	-						
7. Achievement Striving	.10	.05	.32**	-.08	.04	-.06	-					
8. Cognitive Ability	.34**	.09	.07	.67**	-.05	-.10	-.08	-				
9. Negative Affectivity	.01	.03	-.16*	.06	.06	.28**	-.24**	-.07	-			
10. Job Satisfaction	-.11	-.14	.04	-.12	-.38**	-.73**	.18*	.00	-.33**	-		
11. Psychological Distress	.09	.05	-.12	.13	.08	.38**	-.18*	.05	.73**	-.41**	-	
12. Physical Symptoms	.01	-.05	-.03	.00	.04	.24**	.06	-.04	.48**	-.26**	.60**	-

Notes: \*\* $p < .01$ , \* $p < .05$ .  $N=111$  for objective overqualification;  $N=158$  for overeducation;  $N=156$  for skill overqualification;  $N=112$  for cognitive overqualification; and  $N=116$  for cognitive ability.  $N=162$  for all other variables.

Table 4. Model Fit Statistics

Model description	$\chi^2$	<i>df</i>	<i>T<sub>d</sub></i>	CFI	$\Delta$ CFI	TLI	RMSEA	90% CI: RMSEA	AIC
Hypothesized model	376.93**	184	-	.900	-	.885	.08	.069, .092	9320.33
Model with individual differences as antecedents of perceived overqualification	411.54**	182	-	.822	-	.798	.104	.091, .118	5042.82
Model with direct effects of objective overqualification (Final model)	365.03**	181	11.17*	.904	.004	.889	.079	.067, .091	9313.42

Note: \* $p < .05$ , \*\* $p < .01$ .  $T_d$  = Satorra-Bentler scaled chi-square difference test for nested models; CFI = comparative fit index; TLI – Tucker-Lewis index of fit; RMSEA = root mean square error of approximation; AIC= Akaike Information Criterion. The AIC for the model with individual differences should not be compared to the other models, as this model has a different variance-covariance matrix and therefore a different metric to calculate the AIC.



Table 5. Moderated Regression Results of Cognitive Ability Predicting Relative Deprivation

Step 1	
Perceived overqualification	.53**
Cognitive ability	-.07
Step 1 $R^2$	.29
Step 2	
Perceived overqualification	.35**
Cognitive ability	-.54*
Perceived overqualification x cognitive ability	.51
$\Delta R^2$	.017
Total $R^2$	.307
Total $F$	16.54**

Notes:  $N=116$ . \*  $p < .10$ , \*\*  $p < .01$ . Standardized beta coefficients are reported.

Table 6. Moderated Regression Results of Negative Affectivity Predicting Relative Deprivation

Step 1	
Perceived overqualification	.51**
Negative affectivity	.25**
Step 1 $R^2$	.339
Step 2	
Perceived overqualification	.41*
Negative affectivity	.11
Perceived overqualification x negative affectivity	.18
$\Delta R^2$	.001
Total $R^2$	.341
Total $F$	27.19**

Notes:  $N= 162$ . \* $p < .05$ , \*\* $p < .01$ . Standardized beta coefficients are reported.

Table 7. Moderated Regression Results of Achievement Striving Predicting Perceived Overqualification

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Step 1	
Objective overqualification	.55**
Achievement striving	-.04
Step 1 $R^2$	.297
Step 2	
Objective overqualification	-.51
Achievement striving	-.04
Objective overqualification x achievement striving	1.07
$\Delta R^2$	.016
Total $R^2$	.313
Total $F$	16.25**

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Notes:  $N=111$ . \*  $p < .05$ , \*\*  $p < .01$ . Standardized beta coefficients are reported.

Figures

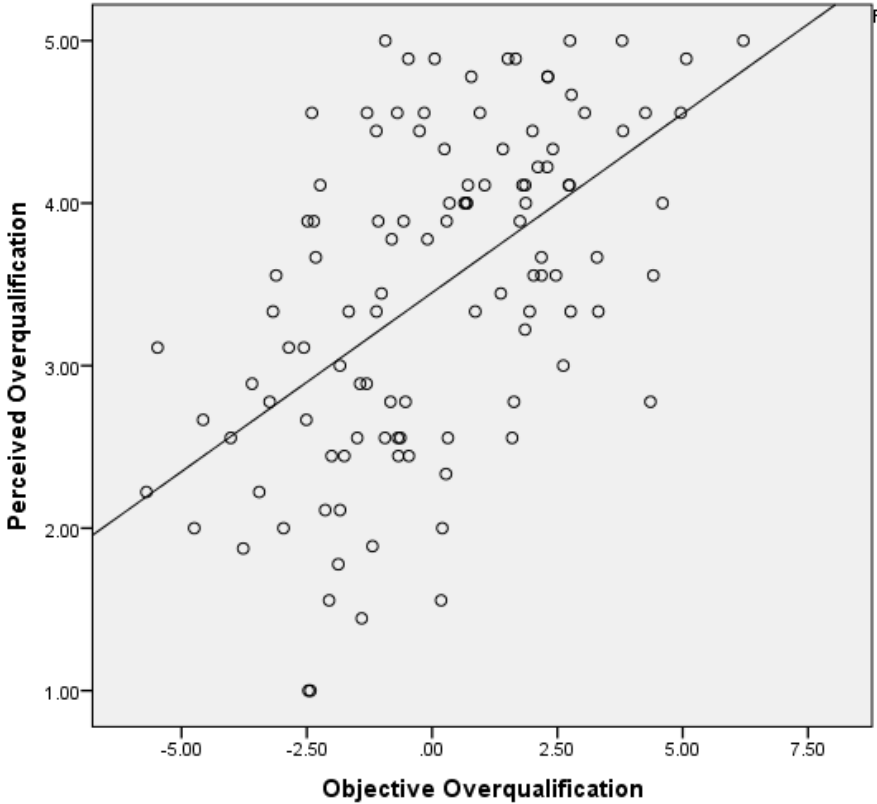


Figure 1. Scatterplot of the relationship between objective overqualification and perceived overqualification.

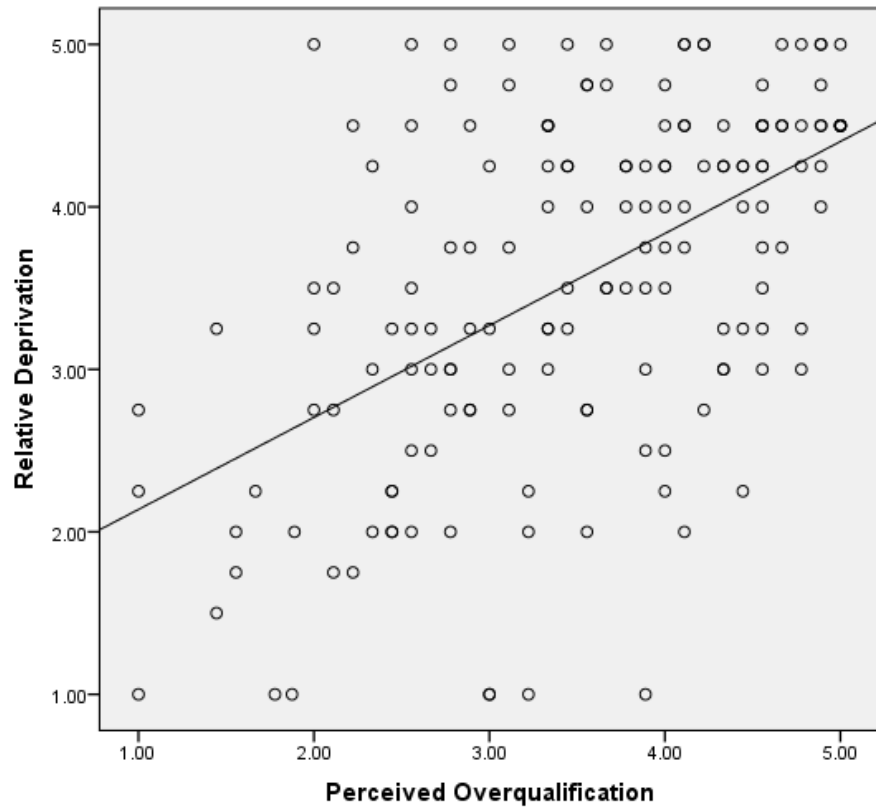


Figure 2. *Scatterplot of the relationship between perceived overqualification and relative deprivation.*

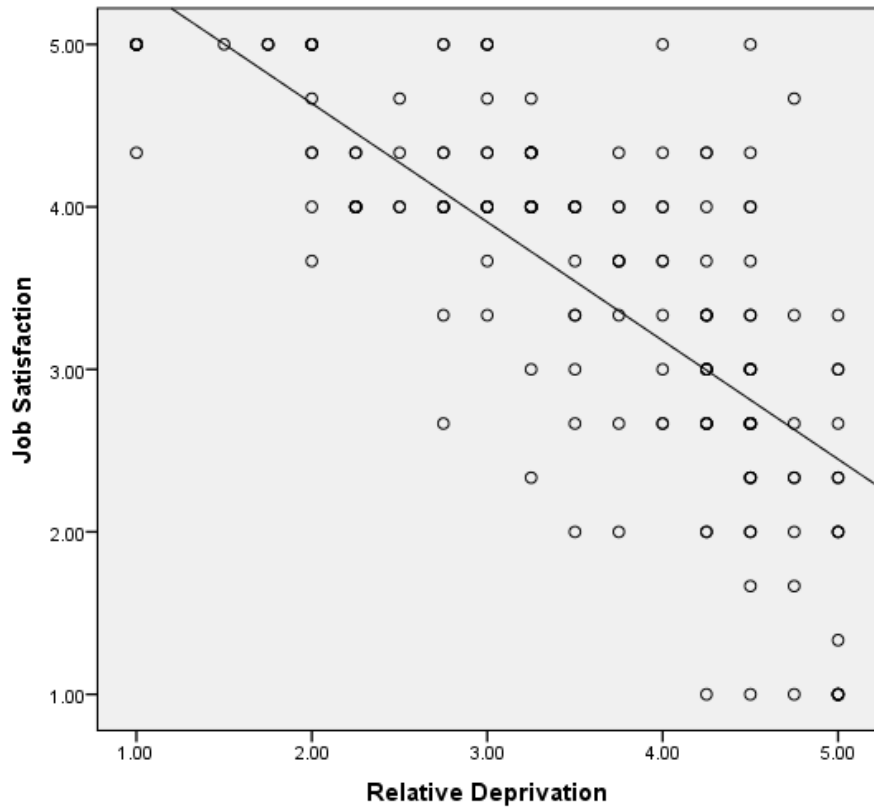


Figure 3. Scatterplot of the relationship between relative deprivation and job satisfaction.

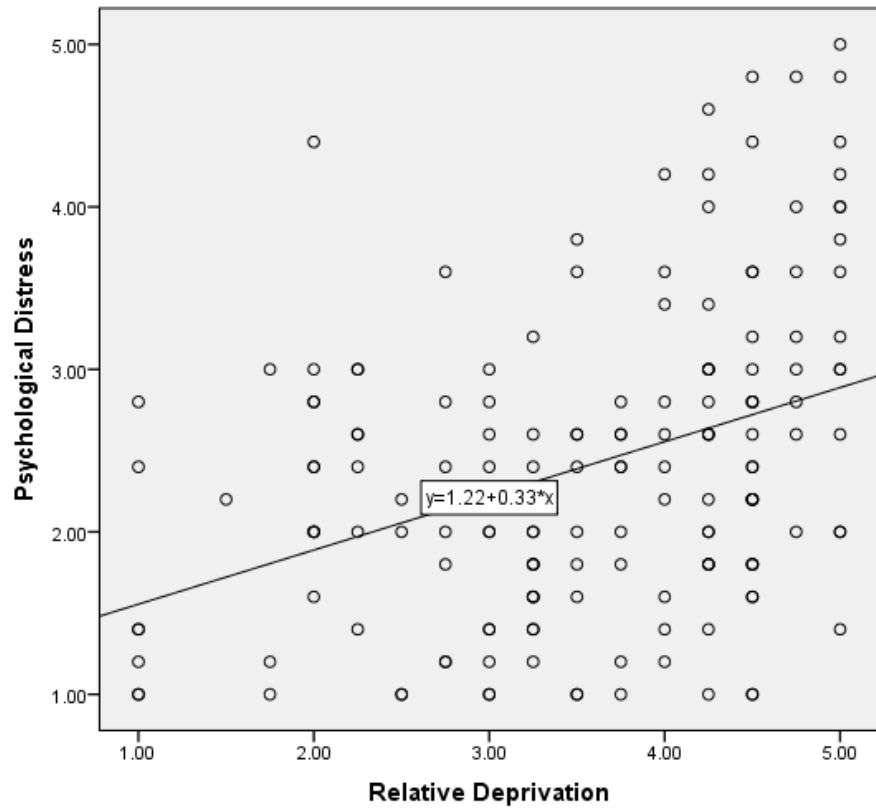


Figure 4. Scatterplot of the relationship between relative deprivation and psychological distress.

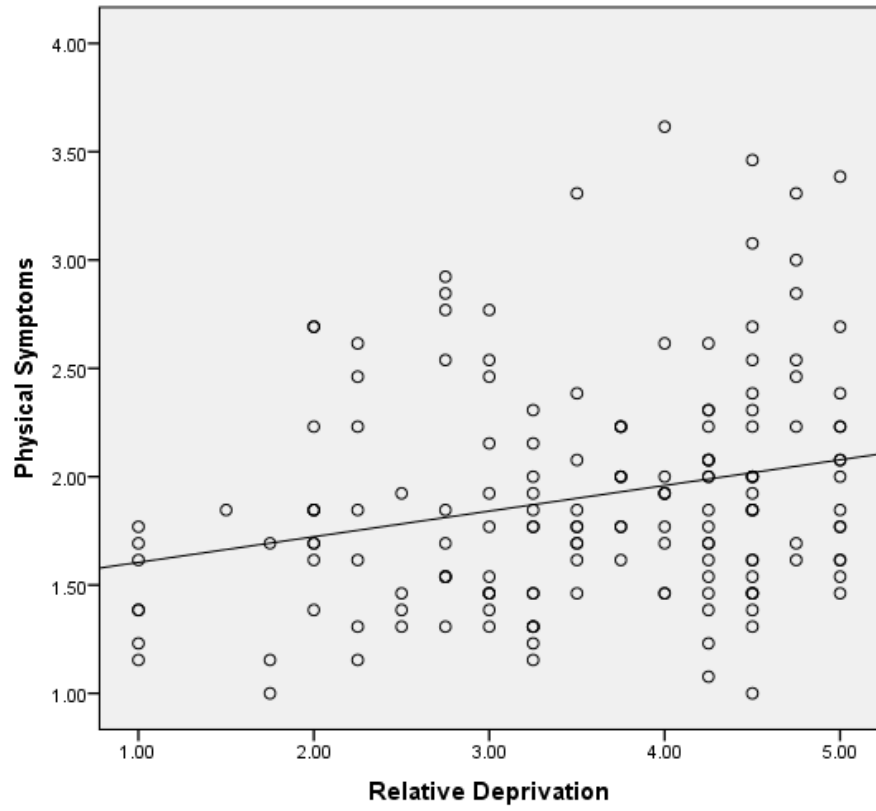


Figure 5. *Scatterplot of the relationship between relative deprivation and physical symptoms.*



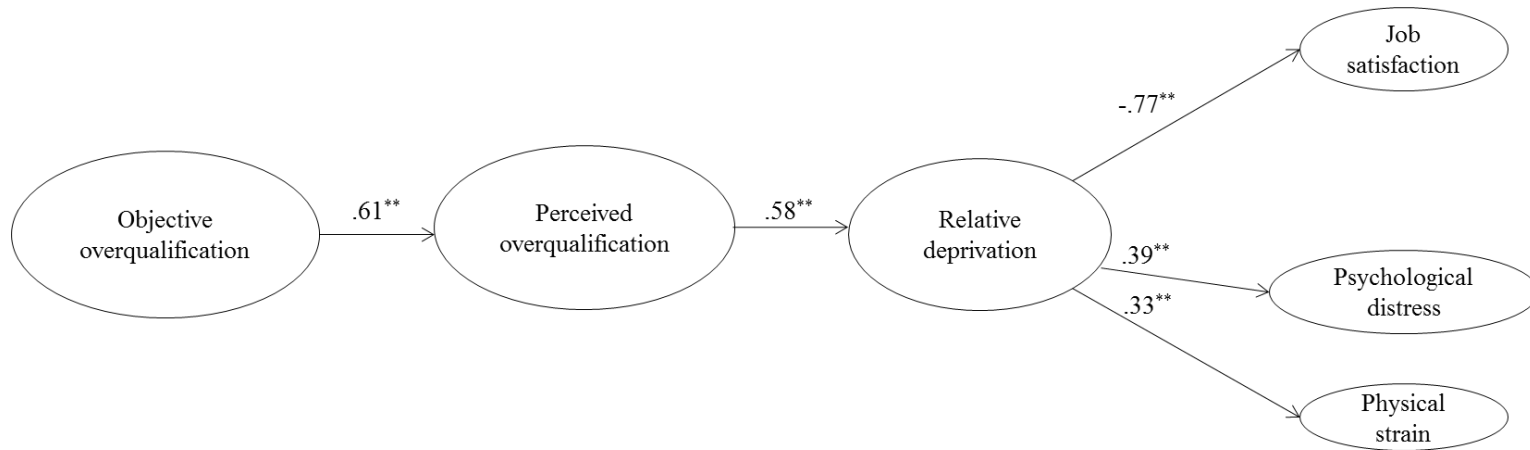


Figure 6. *SEM results for the hypothesized model.* \*\* $p < .01$ . Standardized coefficients are reported.  $\chi^2(184) = 376.93^{**}$ , CFI = .90, TLI = .885, RMSEA = .08, AIC = 9320.33.

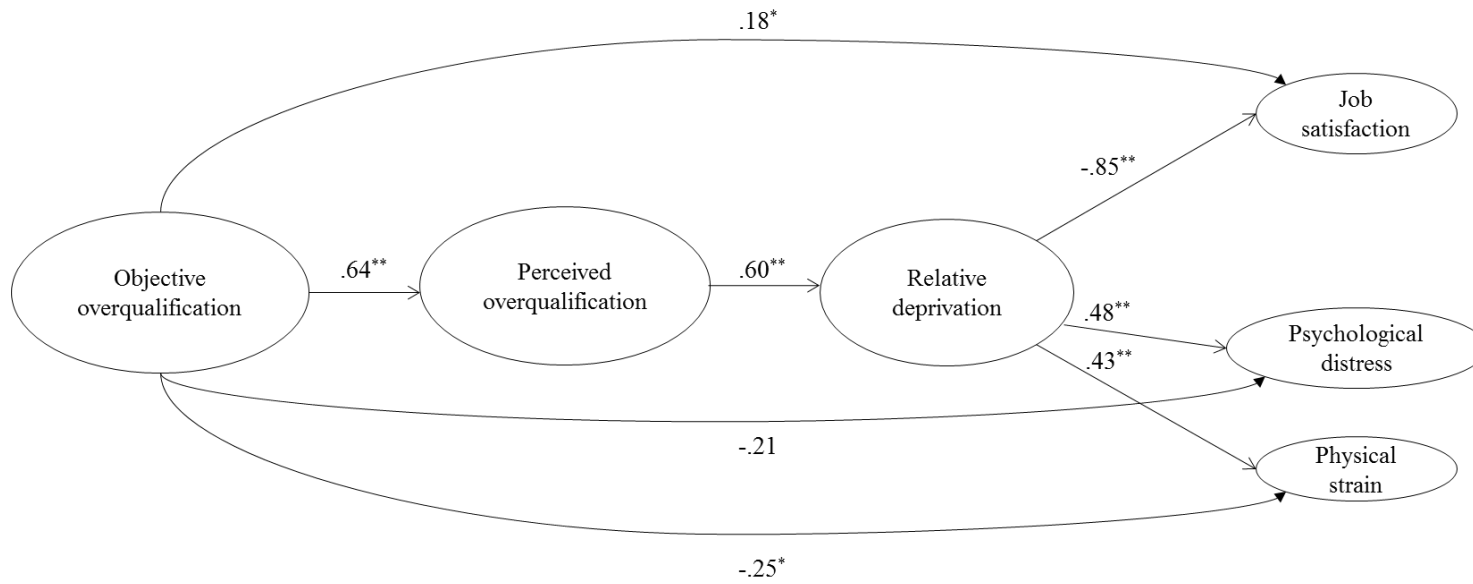


Figure 7. *SEM results for the alternative model with direct effects of objective overqualification on outcomes.* \*  $p < .05$ , \*\*  $p < .01$ . Standardized coefficients are reported.  $\chi^2(181) = 365.03^{**}$ , CFI = .904, TLI = .889, RMSEA = .079, AIC = 9313.42.

## Appendices

## Appendix A: O\*NET Skills

Response options range from 1 (“This is not a skill of mine”) to 5 (“I am excellent at this skill”)

The following items include a wide variety of skills individuals may have. Please rate the extent to which you have each skill.

1. Active Learning- Understanding the implications of new information for both current and future problem-solving and decision-making.
2. Active Listening- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
3. Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
4. Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
5. Mathematics — Using mathematics to solve problems.
6. Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
7. Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
8. Science — Using scientific rules and methods to solve problems.
9. Speaking — Talking to others to convey information effectively.
10. Writing — Communicating effectively in writing as appropriate for the needs of the audience.
11. Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
12. Management of Financial Resources — Determining how money will be spent to get the work done, and accounting for these expenditures.
13. Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.
14. Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.
15. Time Management — Managing one's own time and the time of others.
16. Coordination — Adjusting actions in relation to others' actions.
17. Instructing — Teaching others how to do something.
18. Negotiation — Bringing others together and trying to reconcile differences.
19. Persuasion — Persuading others to change their minds or behavior.
20. Service Orientation — Actively looking for ways to help people.
21. Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.
22. Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
23. Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

24. Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
25. Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
26. Equipment Selection — Determining the kind of tools and equipment needed to do a job.
27. Installation — Installing equipment, machines, wiring, or programs to meet specifications.
28. Operation and Control — Controlling operations of equipment or systems.
29. Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
30. Operations Analysis — Analyzing needs and product requirements to create a design.
31. Programming — Writing computer programs for various purposes.
32. Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
33. Repairing — Repairing machines or systems using the needed tools.
34. Technology Design — Generating or adapting equipment and technology to serve user needs.
35. Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Source: Occupational Information Network (O\*NET; <http://www.onetonline.org/skills/>)

## **Appendix B: Perceived Overqualification**

Response options: 1= “Strongly Disagree,” 2= “Disagree,” 3= “Neutral,” 4= “Agree,” 5= “Strongly Agree”

Please reflect the response which best reflects how you feel.

1. My job requires less education than I have.
2. The work experience that I have is not necessary to be successful on this job.
3. I have job skills that are not required for this job.
4. Someone with less education than myself could perform well on this job.
5. My previous training is not being fully utilized on this job.
6. I have a lot of knowledge that I do not need in order to do my job.
7. My education level is above the education level required by my job.
8. Someone with less experience than myself could do my job just as well.
9. I have more abilities than I need in order to do my job.

Source: SPOQ; Maynard, Joseph, and Maynard (2006)

## **Appendix C: Relative Deprivation**

Response options: 1= “Strongly Disagree,” 2= Disagree,” 3= “Neutral,” 4= “Agree,” 5= “Strongly Agree”

Please reflect on your own experiences, qualifications, and goals in order to answer the questions below.

1. I want a better job situation than the one I have now.
2. I think I ought to have a better job situation than the one I have now.
3. I am angry or upset about my current job situation.
4. I think I will be more satisfied with another job situation when compared to my current one.

Source: Feldman and Turnley (2004); last item self-developed

## **Appendix D: Achievement Striving**

Response options: 1= “Very inaccurate,” 2= “Inaccurate,” 3= “Neither accurate or inaccurate,” 4= “Accurate,” 5= “Very accurate”; (R) indicates a reverse-scored item  
Please indicate how accurately each statement describes you.

1. Go straight for the goal.
2. Work hard.
3. Turn plans into actions.
4. Plunge into tasks with all my heart.
5. Do more than what’s expected of me.
6. Set high standards for myself and others.
7. Demand quality.
8. Am not highly motivated to succeed. (R)
9. Do just enough work to get by. (R)
10. Put little time and effort into my work. (R)

Source: IPIP-NEO; Goldberg (1999)



## **Appendix E: Negative Affectivity**

Response options: 1= “Very slightly or not at all,” 2= “A little,” 3= “Moderately,” 4= “Quite a bit,” 5= “Extremely”

This scale consists of a number of words that describe different feelings and emotions. Indicate to what extent you generally feel this way, that is, how you feel on average.

1. Scared
2. Afraid
3. Upset
4. Distressed
5. Jittery
6. Nervous
7. Ashamed
8. Guilty
9. Irritable
10. Hostile

Source: PANAS; Watson, Clark, and Tellegen (1988)

## **Appendix F: Job Satisfaction**

Response options: 1= “Strongly Disagree,” 2= Disagree,” 3= “Neutral,” 4= “Agree,” 5= “Strongly Agree”

Please indicate the response which best reflects how you feel.

1. In general, I do not like my job.
2. All in all, I am satisfied with my job.
3. In general, I like working here.

Source: MOAQ; Cammann, Fichman, Jenkins, and Klesh (1983)

## **Appendix G: Psychological Distress**

Response options: 1= “Never,” 2= “Rarely,” 3= “Sometimes,” 4= “Often,” 5= “All the time”

Have you recently...

1. Felt constantly under strain?
2. Felt that you couldn't overcome your difficulties?
3. Been feeling unhappy and depressed?
4. Been losing confidence in yourself?
5. Been thinking of yourself as worthless?

Source: Goldberg and Williams (1991)

## **Appendix H: Physical Symptoms**

Response options: 1= “Not at all,” 2= “Once or twice,” 3= “Once or twice per week,” 4= “Almost every day,” 5= “Every day”

Over the past month, how often have you experienced each of the following symptoms?

1. An upset stomach or nausea
2. Backache
3. Trouble sleeping
4. Headache
5. Acid indigestion or heartburn
6. Eye strain
7. Diarrhea
8. Stomach cramps (Not menstrual)
9. Constipation
10. Ringing in the ears
11. Loss of appetite
12. Dizziness
13. Tiredness or fatigue

Source: PSI; Spector and Jex (1998)

## Appendix I: Demographics

1. Gender:  Male  Female
2. Age: \_\_\_\_
3. Ethnicity:
  - Caucasian/White
  - Native American
  - Latino/Hispanic
  - African American
  - Asian
  - Other (please specify): \_\_\_\_\_
4. Marital status:
  - Single
  - Married
  - Divorced / separated
  - Live-in partner / Domestic partnership
5. Field of Bachelor's degree: \_\_\_\_\_
6. Date of graduation (Month/Year): \_\_ / \_\_\_\_
7. Have you completed any formal education since obtaining your Bachelor's degree?  
 Yes  No  
If yes: Please explain: \_\_\_\_\_
8. Please select the industry that is most relevant to your current job.  
(Response options included the NAICS job industries used by O\*NET)
9. Please select the occupation that is the closest to your current job.  
(Response include the O\*NET-SOC occupations for each industry, as well as the option, "None of these occupations are close to my current job").
10. What is your current job title? \_\_\_\_\_
11. How many hours do you work per week? \_\_\_\_
12. When did you begin working for your current company? (Month/ Year) \_\_ / \_\_\_\_
13. When did you begin working in your current position? (Month/ Year) \_\_ / \_\_\_\_
14. What year did you graduate from high school? \_\_\_\_

## **Appendix J: Institutional Review Board Approval Letter**

April 22, 2014

Maryana Arvan, B.A.  
Psychology  
4202 East Fowler Ave.

Tampa, FL 33620

RE: Exempt Certification  
IRB#:Pro00017053  
Title: Career Experiences of New Psychology Graduates

### **Study Approval Period: 4/21/2014 to 4/21/2019**

Dear Ms. Arvan:

On 4/21/2014, the Institutional Review Board (IRB) determined that your research meets USF requirements and Federal Exemption criteria as outlined in the federal regulations at 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Approved Documents:

Study Protocol- 4.8.14.docx  
Informed Consent- Baseline Survey- College Seniors- VERSION 1- 4.17.14.docx  
Informed Consent- Survey- All Participants- VERSION 1- 4.17.14.docx

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF IRB policies and procedures. Please note that changes to this protocol may disqualify it from exempt status. Please note that you are responsible for notifying the IRB prior to implementing any changes to the currently approved protocol.

The Institutional Review Board will maintain your exemption application for a period of five years from the date of this letter or for three years after a Final Progress Report is received, whichever is longer. If you wish to continue this protocol beyond five years, you will need to submit a new application at least 60 days prior to the end of your exemption approval period.

Should you complete this study prior to the end of the five-year period, you must submit a request to close the study.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kristen Salomon', followed by a horizontal line.

Kristen Salomon, Ph.D., Vice Chairperson  
USF Institutional Review Board