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# INVESTIGATING WORK ENGAGEMENT AND AFFECTIVE COMMITMENT THROUGH A MULTI-DIMENSIONAL WORK UNDERLOAD SCALE, MEDIATED BY WORK-RELATED BOREDOM

Jessica Clemons

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THROUGH A MULTI-DIMENSIONAL WORK UNDERLOAD SCALE,  
MEDIATED BY WORK-RELATED BOREDOM

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A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
in  
Psychology: Industrial / Organizational

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by  
Jessica G Clemons  
June 2020

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## ABSTRACT

Previous research on workload has primarily approached work underload as unidimensional focusing on either repetitive monotonous tasks or the employee's perception of their current workload. Researchers have focused on work related outcomes, such as job engagement and organizational commitment, as consequences of those perceptions. Recently, work related boredom has been measured alongside work underload as precursors to aforementioned outcomes. In the current study we investigated if a recently developed, more complex, multidimensional scale of work underload, including desire for more work and expectation of more work, would better explain the relationship between perceived work underload, and work-related boredom, job engagement, and affective organizational commitment. For the present study, 169 participants were recruited from the MTurk and through snowball sampling and included 49% full time working women and 50% full time working men. The average age of the participants was 34. Hierarchical multiple regression analyses were conducted to test for significant changes when a desires and an expectations dimension are added to a model with perceived work underload. We found that adding both a desires and an expectation dimension did not further explain the relationship between work underload and job engagement or organizational commitment, however it did better explain the relationship between work underload and work related boredom. Furthermore, in this study we examined the mediating effect of work-related boredom between the multidimensional work underload scale and

job engagement and affective organizational commitment. Results indicate that work related boredom mediated the relationship between work underload and the aforementioned outcomes. Implications from this study suggest whether researchers should consider the effects of desires and expectations when investigating perceptions of workload. In practice, these results could emphasize the importance employee's expectations and desires play in how they perceive their job, and how to avoid work related boredom.

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## CHAPTER ONE

### INTRODUCTION

Research on occupational stress and workplace outcomes has been a popular topic since the 1960s. Most of the research has been directed at looking at the negative relationship between work stressors, employee well-being, and organizational outcomes such as job dissatisfaction and absenteeism. *Work stressors* are job related conditions that require an adaptive response from employees. These include conditions related to the number of hours an employee works, physical and organizational constraints of the job, and the physical and mental workload of the job, with excessive workloads being the most researched work stressor (Bowling, Alacron, Bragg, & Hartman, 2015).

*Workload* refers to any variable that reflects the quantity of demands in one's job. It includes both qualitative and quantitative dimensions and can be measured as both subjective, or perceived workload, versus objective workload, as well as include both mental and physical tasks (Bowling et al., 2015).

However, there are different types of workload. For example, work that has excessive time to be completed and low problem-solving demands is often considered work *underload* and is at one end of the workload spectrum.

Conversely, work that has excessive time constraints and demands higher levels of problem solving is considered work *overload* and lies at the opposite end of the spectrum. Work that has sufficient time allowances and problem solving skills

that match the employee skills and abilities is referred to as matched workload (Shultz, Wang, & Olson, 2010).

Research on workload has largely focused on the negative relationships between employee wellbeing and organizational outcomes with excessive workload, commonly referred to as work overload. Occupational stress has been shown to be highly correlated with work overload with regard to both psychological symptoms such as frustration, anxiety, and depression, as well as physical symptoms such as high blood pressure, gastrointestinal problems, and cardiovascular disease (Anshel, Brinthaup, & Kang, 2010; Bowling et al., 2015; Parasuraman & Purohit, 2000; Spector & Jex, 1998). Work overload has also been researched in terms of organizational outcomes. Researchers have found that work overload has been highly correlated with burnout, role conflict, and job dissatisfaction (Spector & Jex, 1998). Furthermore, Bowling et al. (2015) conducted a meta-analysis on workload research and found an overall weak correlation with employee withdrawal and organizational commitment. This suggests that although there is a correlation between work overload and employee withdrawal and commitment, there may be other factors that could be more influential.

Researchers have also looked extensively at possible antecedents of work overload. For example, Kirmeyer and Dougherty (1988) found that supervisor support moderated the relationship between perceived workload and distress. Specifically, they found that as supervisor support increased, perceived work

overload decreased. In addition, Spector and Jex (1998) found positive correlations between negative affectivity and gender with workload. Specifically, they found that although women report higher levels of workload than men, negative affectivity was positively correlated with perceived workload regardless of gender. Recent studies have found that technology changes in the workplace and economic turmoil have also been correlated with perceived workloads (Sohail, Ahmad, Tanveer, & Tariq, 2012). Since there has been extensive research on the antecedence and consequences of excessive workloads, this study will focus instead on the opposite end of the workload spectrum, namely work underload. Although there has been some research on work underload, a majority of that research has been limited to studying assembly line workers and the consequences of monotonous work.

### Work Underload

Work underload was first researched in assembly lines and identified as the monotony of work with short repetitive cycles of work which caused high stress and physical health issues (Lunberg, Granqvist, Hansson, Magnusson, & Wallin, 1989). As assembly lines have been transformed with machinery and technology, underload researchers began to look at the perceptions of underload held by individuals and the negative outcomes of those perceptions.

Perceptions of work underload have most commonly been linked to work-related boredom and boredom stress. This occurs when work is perceived as not being stimulating or as meaningless, and often consists of an underutilization of

the employee's skills (Parasuraman & Purohit, 2000). Work-related boredom has shown to have negative effects on employees' reported levels of organizational commitment, job satisfaction, and work engagement, and has been correlated with higher absenteeism, as well as higher counter-productive work behaviors (Fisher, 1993; Guglielmi, Simbula, Mazzetti, Tabanelli, & Bonfiglioli, 2013; Van Wyk, De Beer, Pienaar, & Schaufeli, 2016). These consequences effect employee performance and productivity, ultimately hindering overall organizational performance.

Measurements of work underload have also been limited, mostly defining it as unidimensional with scales of underload including very few items and containing methodological shortcomings (Melamed, Ben-Avi, Luz, & Green, 1995; Ree, Odeen, Eriksen, Indahl, Ihlebaek, Hetland, & Harris, 2014; Shultz et. al., 2010). Recent research on work underload often includes measures of work-related boredom, in which researchers have recognized the complexity of boredom and work-related boredom scales tend to include multiple dimensions and numerous items (Loukidou, Loan-Clarke & Daniel, 2009; Reijsegar, Schaufeli, Peeters, Taris, van Beek, & Ouweneel, 2013; Vodanovich & Watt, 2016). Although work underload is one precursor to work-related boredom (Loukidou et al., 2009), little attention has been given to the development of an improved scale for accurately and comprehensively measuring work underload.

Naude (2015) recognized that work underload may be more complex than previously thought and thus created a three-dimension work underload scale as

part of her master's thesis. Naude's research focused on the cognitive appraisal theory and the person-environment (P-E) fit theory to form her scale of work underload and explain how previous measures failed to encompass the employees' perceptions of their current workload, whether or not the employee expected to have more work, and whether they desired more work. Therefore, depending on how the individual perceives the work underload, along with if they expected more work or wanted more work, will affect the behavior of the individual. For example, employees who perceive they have a low workload, were expecting a low workload, and thus do not desire more work should be more satisfied with their job than employees who perceive that they have a low workload, were expecting more work, and desired more work. A more complex, multilevel scale to comprehensively measure work underload, like the one Naude (2015) has created, would be beneficial for researchers and organizations to help them better understand how employee's perceptions and desires of their workload play a key role in organizational outcomes and work-related boredom.

Therefore, the major purpose of this study was to explore the relationship between work related outcomes, such as work engagement and organizational commitment, with perceptions of work underload, from the three-dimension scale developed by Naude (2015): perception of workload, desired workload, and expected workload. Furthermore, I investigated if perceptions of work-related boredom had a mediating role between these outcomes and the three dimensions of work underload.



Workload is an all-inclusive term that can include any aspect of one's job that may contribute to the difficulty of an individual's work. This can include mental components and physical components and can be measured both qualitatively and quantitatively (Bowling et al., 2015). Much of the research on workload has focused on excessive workloads and the negative consequences on employee wellness and work-related outcomes (Anshel et. al., 2010; Bowling et al., 2015; Parasuraman & Purohit, 2000; Spector & Jex, 1998). Workload researchers have also found that the relationship between workload and outcomes is nonlinear. That is, although work overload has a strong correlation with negative outcomes on both the employee and the organization, work underload has also been linked with those negative outcomes (Bowling et al., 2015; Shultz et al., 2010). This suggests a curvilinear relationship between workload and negative outcomes. In addition, it also suggests that more research is needed to fully understand the relationship between work underload and individual, as well as work related outcomes.

Early research on work underload focused on the monotony of work in assembly line work conditions finding a correlation between working on assembly lines with high stress and physical health problems (Lunberg et al., 1989). These studies examined differences between gender, age, and work shifts and focused on outcomes such as cardiovascular health, blood pressure, absenteeism, and job dissatisfaction (Lunberg et al., 1989; Melamed et al., 1995), implying that

work overload was not the only form of workload that can lead to negative work-related outcomes.

Melamed, Ben-Avi, Luz, and Green (1995), explored the differences between objective and subjective work monotony. They defined objective work monotony as repetitive work and related job conditions, while subjective work monotony was defined as employees who were working at jobs beneath their perceived abilities and skills. Although their study found that job dissatisfaction, psychological distress, and absenteeism were related to both objective and subjective monotonous work, the most important finding was that studies need both objective and subjective conditions in order to accurately predict work outcomes.

As ergonomic improvements to the workplace developed and some of the repetitive work cycles were replaced by machines and technology, studies on work underload began to focus on the individual's perceived workload (Lundberg et al., 1989). The shift in focus to perceived work underload is reasonable as perceptions are included in many psychological theories and behavior changes. In addition, overall employee wellbeing is influenced by the perception of stressors (Bowling et al., 2015). The shift also included studies exploring possible antecedences and consequences of work underload.

Studies investigating potential causes of work underload looked at both individual characteristics and workplace situations. One individual characteristic that has been correlated to work underload was negative affectivity (NA). NA is a

personality trait that explains how an individual experiences negative emotion (Bowling et al., 2015; Spector & Jex, 1998). This could explain why negative individuals tend to view their environment more negatively than others, and may be more unsatisfied with their workload, reporting it as overload or underload.

Underemployment has been a recent trend in research (McKee-Ryan & Harvey, 2011), as the U.S. has recently come out of a recession and underemployment have been on the rise. Underemployment is broadly defined as overqualified individuals, with higher work-related knowledge and skills than required for the work they are currently engaged in (Watt & Hargis, 2010). Underemployed individuals may finish their daily tasks much quicker than others or may not find meaning in their daily tasks which may lead them to view their workload as too low (Parasuraman & Purohit, 2000).

Many studies have looked at the characteristics of the workplace as potential causes of work underload. For example, workload design, lack of creativity, routine work, and high attention with little stimulation jobs have all been highly correlated with work underload (Bowling et al., 2015; Lunberg et. al., 1989). At first, work underload was seen mostly as a job design issue and implied it was the fault of the employers. More recently, however, work underload is explained as a much more complex issue that involves employee perceptions and needs, along with the environmental elements (Watt & Hargis, 2010).

Early investigations looking at consequences of work underload focused on objective work, such as repetitive and monotonous work conditions, and found

correlations with stress, anxiety, frustration, high blood pressure, cardiovascular disease, job dissatisfaction, and absenteeism (Lunberg et al., 1989; Melamed et al., 1995). More recent investigations have looked at subjective work underload through employee perceptions of workload, and have been largely correlated with work-related boredom, lower engagement, lower organizational commitment, and job dissatisfaction (van Wyk et al., 2016; Watt & Hargis, 2010).

### Measurement of Work Underload

Work underload has historically been defined by the idea that there is not enough work to fill an individual's workday or that there is an underutilization of the employee's skills. An early measurement of workload was the Quantitative Workload Inventory (QWI) which was problematic and in later versions was reduced to only five items measuring only quantitative workload (Spector & Jex, 1998). Measurements of work underload have mostly defined this construct as unidimensional and scales of underload have included very few items (Froggat & Cotton, 1984; Sales, 1970; Shaw & Weekly, 1985; Shultz et al., 2010). An example of these scales include a study on self-rated health and workload using one question: "Do you have heavy/repetitive work?" on a ten point Likert scale (Ree et al., 2014). Melamed, Ben-Avi, Luz, and Green (1995) noted in their study that research on work underload has had many methodological shortcomings, such as not including job titles, not including women, or a focus on either the individual perceptions of their jobs or just the work characteristics. These shortcomings could affect the outcomes of the studies showing a higher relation

to work stressors overall. Correcting for these errors and having a more comprehensive scale measuring workload may mediate the relationship between work underload and outcomes (Melamed et al., 1995).

Recent research has focused on work-related boredom as a potential outcome of work underload. Work-related boredom has been conceptualized as an emotion held by the individual and mediates the relationship between work underload and outcomes (Fisher, 1993; Loukidou et al., 2009). These studies have used more comprehensive scales of work-related boredom and organizational outcomes, however just like previous research, these studies failed to use a comprehensive underload scale as the precursor to work-related boredom.

Recent research by Naude (2015) recognized that underload may be more complex than previously thought. Naude also recognized that research to date has focused mostly on the qualitative aspect of work underload which correlates with the recent trending issues of underemployment. A better scale for measuring quantitative work underload would be beneficial as research on boredom has suggested that quantitative underload could be a precursor to work-related boredom (Fisher, 1993). Concerns over work-related boredom are on the rise as studies have found that although the monotony of work has declined, work-related boredom has increased due to machinery and technology in the workplace (Loukidou et al., 2009).

Naude (2015) set out to develop and gather validity evidence for a multiple item, three-dimensional scale to measure quantitative work underload since it has been largely ignored in recent research. Unfortunately, Naude did not name her scale, so for the purposes of my study I will refer to her scale as the Naude Work-related Underload Scale (NWUS). The three sub-dimensions included in NWUS are perceptions, expectations, and desires.

The perception and expectation dimensions of NWUS includes items that ask individuals how they perceive their current workload through a quantitative lens and if they expected their job to have a higher workload. *Cognitive appraisal theory* is an emotion theory that individuals appraise the potential harm or benefit related to their current situation and then decide on the appropriate way to change the situation if needed (Lazarus, 1966). The cognitive appraisal theory applies when examining work underload because it demonstrates how individuals first expected and then perceived environmental stressors and how it can create different emotions for each individual (Lazarus, 1966; Naude, 2015). The desires dimension of NWUS includes several items that ask individuals if they wish or would want a higher workload. The *person-environment fit theory* is a theory that behavior is a function of both characteristics of the individual and characteristics of the environment (Kristof-Brown, Zimmerman, & Johnson, 2005). Fit occurs when these characteristic's match. Some of the characteristic can include the individual's needs and desires (Edwards, 1991) which can affect the perceptions of work underload. If employees desire a different workload than

they expected or perceive they currently have, it may affect how they perceive their current workload (Naude, 2015).

Taking a three dimensional approach to work underload would be more comprehensive than the common one dimensional approach, however the NWUS was not designed to combine the scores of each dimension into one overall underload factor. Instead, Naude (2015) suggested scoring each dimension separately, and although related, different combinations should better explain the work underload concept. For example, someone who rates high in perception and low in expectation and desires would have the same overall score as someone who scores low in perception and expectations, but high in desire. According to P-E fit theory, the first person would experience matched workload and have positive work outcomes, however the second person would experience work underload and should therefore result in more negative work outcomes (Naude, 2015).

### Work-Related Boredom

Boredom is a dissatisfying human emotion caused by a temporary low arousal environment (Fisher, 1993). Boredom has been defined in a variety of ways, including an under-stimulating environment, insufficient challenge and meaning, or attention issues with too much time to complete a task (Vodanovich & Watts, 2016). Studies on work-related boredom have focused on combinations of the task characteristics, the individual characteristics, and the work environment itself (Tsai, 2016). Work-related boredom can occur when the

employee's capabilities outweigh the task complexity leaving the employee feeling under-challenged and under-stimulated (van Wyk et al., 2016). The employee has an inability to stay focused on tasks, lacks concentration, and may find work related tasks meaningless due to a lack of challenge (Vodanovich & Watt, 2016). Reports of work-related boredom have been on the rise even though there is less job monotony and repetitive tasks in most jobs (Guglielmi et al., 2013). Advancements in technology and economic turmoil have caused highly qualified individuals to seek and take lower and entry level jobs worldwide (Loukidou et al., 2009; van Wyk et al., 2016). Additionally, recent reports of work-related boredom have begun to replace some of the studies on work-related burnout as it is more likely that work conditions closer reflect boredom characteristics than burnout characteristics, such as an energy draining and exhausting environment (Guglielmi et al., 2013).

Studies of work-related boredom have been linked to work underload (Fisher, 1993; Guglielmi et al., 2013; van Wyk et al., 2016). Much of the underload research on low stimulating jobs such as work on assembly lines, driving, and piloting, demonstrate the same qualities of boredom because they have a high demand for attention but very little stimulation (Fisher, 1993). When employees perceive less stimulation, monotony, or job repetition over long periods of time, this type of underload is considered situational and chronic (Guglielmi et al., 2013). Furthermore, when employees report having nothing to



do or that the job is too simple and not challenging, this is a function of both quantitative underload and qualitative underload, respectively (Fisher, 1993).

Originally, it was assumed that workplace characteristics, such as no social interaction, exact job procedures, and limited variation in the tasks (Fisher, 1993), led to workplace boredom, however recent research has suggested that it is actually the employee's perceptions and appraisal of work elements that led to feelings of boredom. Vodanovich and Watt (2016) recently looked at studies that used a Boredom Proneness Scale (BPS) to detect trait boredom in individuals and examined the outcomes correlated with boredom prone individuals. They found that boredom prone individuals were significantly more likely to engage in counterproductive work behaviors (CWBS) and be underemployed. Employees who often feel bored will probably characterize their job as boring (Fisher, 1993). They also looked at negative affect in relation to BPS. They found significant relationships between all components of negative affect: depression, anxiety, anger, and aggression; with depression having the strongest relationship. This suggests that employees who report higher levels of negative affect may be more prone to boredom and therefore may experience work-related boredom more frequently than employees who report lower levels of negative affect.

Some consequences of work boredom include employees having a lapse of attention on tasks, falling asleep at work, making many mistakes, and being involved in more accidents (Fisher, 1993). There have also been consequences on employee well-being. Employee well-being is often discussed as

psychological stress and includes a mental and physical dimension. The mental component has been variously defined in research, however it usually includes employee's feelings, moods, and emotions. These include feelings of pressure, depression, anxiety, frustration, nervousness, and overall perceived stress while at work and can result in both chronic and acute conditions, referred to as psychological distress. These feelings are measured objectively through observable symptoms. These include physical symptoms such as tension, strain, backaches, headaches, high-blood pressure, and cardiovascular disease (Anshel et al., 2010; Parasuraman & Purohit, 2000). Psychological stress is most often correlated with work overload (Bowling et al., 2015, Spector & Jex, 1998).

However, another form of stress that effects employee's well-being is related to work-related boredom. *Boredom stress* occurs when work tasks are not stimulating or are perceived as meaningless, are monotonous or repetitive, and where an employee feels an underutilization of their skills and abilities (Parasuraman & Purohit, 2000; van Wyk et al., 2016). This creates a negative affective state and when bored behaviors do not effectively reduce the bored feelings, the individual may use coping strategies and may change behaviors to non-work related behaviors or may lack coping strategies, which lead to stress (van Hooff & van Hooft, 2014).

Counterproductive work behaviors (CWB) have also been correlated with boredom. These nonproductive behaviors include withdrawal, daydreaming, sabotage, abuse, theft, and other similar anti productive behaviors (Vodanovich

& Watt, 2016). CWBs can occur if work-related boredom is intermittent or if it is continual. If continual exposure to boredom is present, then over time the employee will experience job dissatisfaction and the rate of absenteeism may rise (Fisher, 1993). Work engagement may also be affected over long-term exposure to boredom. Work engagement promotes positive emotions and job satisfaction, whereas work-related boredom promotes negative emotions and would suggest that as boredom increases, engagement decreases (Guglielmi et al., 2013).

Previous researchers have made adjustments to general boredom scales to hone in on boredom at work. Lee's (1986) Job Boredom Scale consisted of 17 items that tapped into workplace boredom. Researchers using the scale found negative relationships with job satisfaction and positive relationships with CWBs. The scale however failed to encompass the complexity of boredom as it was unidimensional with a single score (Vodanovich & Watt, 2016). The Dutch Boredom Scale (DUBS) contained six items and was designed to measure employee emotions and cognitions instead of the monotony of the job (Reijsegar et al., 2012). DUBS was created using both existing job boredom scales and boredom proneness scales, tailored to work environment. Researchers using this scale found negative relationships with commitment and satisfaction, and a positive relationship with turnover intention (Vodanovich & Watt, 2016). DUBS suggests that boredom occurs when employees decide there is no value or meaning in what they are doing, so boredom may better be assessed when there

is an understanding of employees preferences and desires. If the situation matches what the employee wants, then they will be less bored (Fisher, 1993).

### Work Engagement

Work engagement is a positive, fulfilling, motivational state which is characterized by employees being enthusiastic at work with high levels of energy (Bakker, Schaufeli, Leiter, & Taris, 2008). Engagement is an activation of energy, focused on desired outcomes and investments at work. This energy is a natural motivator to engaged employees, allowing them to be motivated in many types of work environments, even difficult ones. Researchers have characterized work engagement in three dimensions: vigor, dedication, and absorption. *Vigor* is characterized as high levels of energy and resilience while at work. *Dedication* is characterized as being strongly involved and enthusiastic, with feelings of significance while working. *Absorption* refers to feeling completely engrossed and in deep concentration while performing work tasks (Bakker et al., 2008). Therefore, engaged employees show high levels of energy and a strong identification with their work and work tasks. Highly motivated and engaged employees may also have work related wants that have not yet been met. Furthermore, engaged employees may want more challenges and more work (Warr & Inceoglu, 2012).

As opposed to engaged employees, bored employees show signs of withdrawal, are not focused, and have impaired productivity. Work-related boredom has opposing outcomes to work engagement, as bored employees are

often dissatisfied, negative, unmotivated, and feel an underutilization of their skills (Van Wyk et al., 2016). The presence of boredom decreases engagement while the presence of engagement decreases boredom suggesting these are opposing constructs (Warr & Inceoglu, 2012). Using the P-E fit framework, it can be suggested that employees who wanted a higher workload than their current perceived workload may experience work-related boredom and should be less enthusiastic about their job. It is important to understand the link between work underload and work engagement and the role boredom plays in the relationship.

### Organizational Commitment

Research on organizational commitment has overwhelmingly considered organizational commitment to be an attitudinal construct (Cook & Wall, 1980; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Allen and Meyer (1980) formed a distinction between three common concepts of organizational commitment: affective commitment, continuance commitment, and normative commitment. *Affective commitment* is an emotional attachment to the organization in which one identifies and enjoys membership. These individuals want to continue working for the organization because they identify with the organization. *Continuance commitment* is the obligation or one's responsibility to the organization, so these employees need to stay with the organization due to a lack of alternative employment opportunities. *Normative commitment* is one's experiences before and after entry to the organization. These individuals feel they ought to stay with the organization because of prior reasons, such as

parental involvement or previous rewards from the organization. This three dimensional approach has been supported by other research (Balfour & Wechsler, 1996; Cook & Wall, 1980; Jaros, Jermier, Koehler, & Sincich, 1993, Meyer et al., 2002).

Because work-related boredom explains that employees are dissatisfied with their jobs and do not enjoy membership to the organization, then it can be expected that there is a negative relationship between affective organizational commitment and work-underload through work-related boredom. Van Wyk et al. (2016) found that work-related boredom was negatively correlated with affective organizational commitment, suggesting that bored employees view their jobs as less satisfying and are therefore less committed to stay working in the job. This finding supports previous research on a negative relationship between work-related boredom and job attitudes, commitment, and involvement (Reijseger et.al., 2012; Warr & Inceoglu, 2012). Understanding this relationship between work underload, boredom, and commitment is valuable to organizations as it could affect employee absenteeism and turnover.

### Present Study

The goal of the present study was to explore the relationship between work engagement and affective organizational commitment, with a three dimension scale of work underload which includes perception of workload, desired workload, and expected workload. The three dimensions were treated as separate constructs to explore combinations of perceived, desired, and expected

workloads with the two key work outcomes of work engagement and organizational commitment. Furthermore, in this study we investigated if perceptions of work-related boredom had a mediating role between work engagement and affective organizational commitment, with the three dimensions of work underload.

Person-environment fit theory explains how employee's behavior is reflected in how well they perceive they fit with their environment (Kristof-Brown et al., 2005). This suggests that employees whose perceived workload matches the workload they desire, will have a different behavior than those employees whose perceived workload does not match the workload they desire. Furthermore, employees with matched fit were hypothesized to have an enjoyable, positive work experience, demonstrating engaging behaviors at work. In contrast, employees who do not have matched fit were predicted to have a negative work experience and would be less engaged (Warr & Inceoglu, 2012).

***Hypothesis 1: Perceptions of work underload along with desire for more work, will be more negatively associated with job engagement than perceptions of work underload alone.***

Cognitive appraisal theory explains how employees appraise situations as either harmful or beneficial and then decide if change in the situation is needed (Lazarus, 1966). Employees who expected to have a different workload than they currently perceive, were predicted to appraise the situation and decide whether to leave. Affective organizational commitment includes enjoying and identifying

with one's job (Allen & Meyer, 1980). Employees whose perceived workload was what they expected were predicted to identify with their job and would have higher affective commitment than an employee who expected a different workload than they currently perceive.

***Hypothesis 2:*** *Perceptions of work underload along with expectation for more work, will be more negatively associated with affective organizational commitment than perceptions of work underload alone.*

Previous researchers have linked work related boredom as an outcome of work underload (Fisher, 1993; Guglielmi et al., 2013; van Wyk et al., 2016). However, these previous studies used a unidimensional scale of work underload, looking specifically at perceptions of work underload. In this study we examined a more complex scale of work underload, which included not only perceived work underload, but also employee's desires and expectations of workload. This more fine grain analysis was predicted to help us better understand the role work related boredom plays in relation to work underload and outcomes such as job engagement and affective organizational commitment.

***Hypothesis 3:*** *Perceptions of work underload along with desires and expectation for more work, will be more positively associated with work related boredom than perceptions of work underload alone.*

Work related boredom consists of dissatisfying emotions caused by low arousal and meaningless tasks while at work (Fisher, 1993). Job engagement promotes positive emotions while at work, thus suggesting that job engagement



is the opposite of work-related boredom (Warr & Inceoglu, 2012). Therefore, the presence of boredom was predicted to decrease job engagement.

***Hypothesis 4:*** *Work related boredom will mediate the effect of perceptions of work underload along with desire and expectation for more work on job engagement.*

Work related boredom consists of employee's perceptions and appraisal of their work elements (Vodanovich & Watt, 2016). Bored employees are usually unhappy and do not enjoy membership in the organization (van Wyk et al., 2016) suggesting that bored employees are less committed to staying on the job and would have a negative relationship to affective organizational commitment.

***Hypothesis 5:*** *Work related boredom will mediate the effect of perceptions of work underload along with desire and expectation for more work on affective organizational commitment*

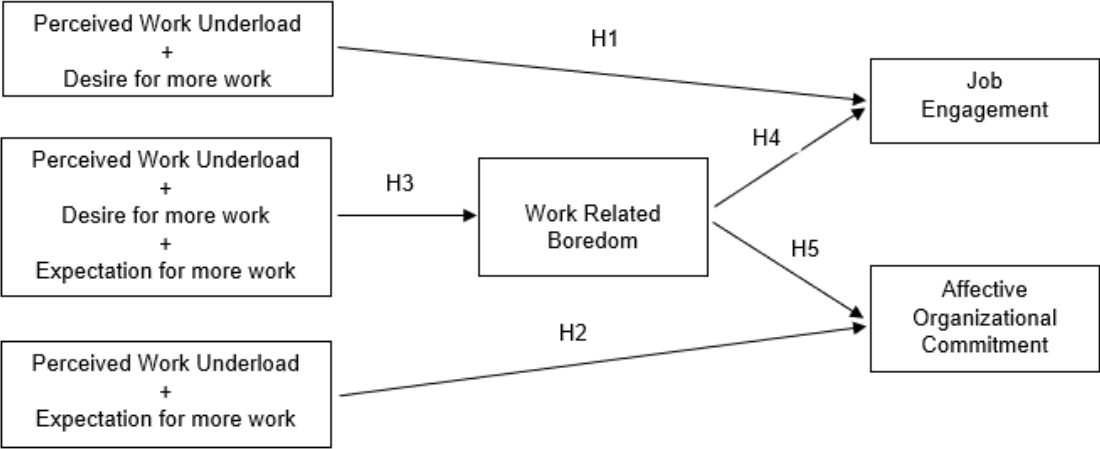


Figure 1. Model and Illustration of Hypotheses

## CHAPTER TWO

### METHOD

#### Participants

Participants in this study were 20 years of age or older and currently employed working at least 16 hours per week. Gpower (Faul & Erfelder, 1992) was used to conduct an a priori power analysis. Using linear regression with four predictors, a small effect size of .10, and power set at .85, it was indicated that the suggested minimum sample size of 140 participants was needed to find sufficient statistical power with an alpha of .05.

There was a total of 235 participants who completed this study. After attention checks and data cleaning procedures, only 169 participants were used for testing the study's hypotheses. There were 83 women (49%), 84 men (50%), and 2 unanswered (1%) participants who ranged in age from 20 years old to 68 years old. The average age of participants was 34 years old. The sample consisted mostly of Caucasian (54.4%) and Asian (18.3%), followed by Hispanic (9.5%) and African American (13%). The average hours worked per week by participants was 40.5 hours and the average tenure at current job was 39.72 months. Please see below for a detailed demographics in Table 1 for categorical variables and Table 2 for continuous variables.

Table 1. Categorical Demographic Variables

Variable	Total N=169	Mturk N=123	Snowball N = 46
<b>Gender</b>			
Male	84 (49.70%)	75 (60.98%)	9 (19.62%)
Female	83 (49.11%)	47 (38.21%)	36 (78.33%)
Unanswered	2 (1.19%)	1 (.81%)	1 (2.05%)
<b>Ethnicity</b>			
White	92 (54.44%)	65 (52.85%)	27 (58.73%)
Asian	31 (18.34%)	30 (24.39%)	1 (2.20%)
Hispanic	16 (9.47%)	5 (4.07%)	11 (23.93%)
African American	13 (7.69%)	13 (10.57%)	0
Native American	3 (1.89%)	2 (1.60%)	1 (2.20%)
Variable	Total N=169	Mturk N=123	Snowball N = 46
Other	10 (5.99%)	6 (4.92%)	4 (8.74%)
Unanswered	3 (1.77%)	2 (1.60%)	1 (2.20%)
<b>Education</b>			
4 Year Degree	73 (43.20%)	56 (45.53%)	17 (37%)
Some College	27 (16.00%)	22 (17.89%)	5 (10.66%)
Master's Degree	23 (13.60%)	13 (10.57%)	10 (21.76%)
2 Year Degree	20 (11.80%)	12 (9.75%)	8 (17.42%)
High School Degree	17 (10.10%)	16 (13.01%)	1 (2.46%)
Higher Level	9 (5.31%)	4 (3.25%)	5 (10.90%)
<b>Occupation</b>			
Managerial	36 (21.30%)	26 (21.10%)	10 (21.70%)
Arts / Entertainment	31 (18.30%)	29 (23.60%)	2 (4.30%)
Professional-Internship	23 (13.60%)	7 (5.70%)	16 (34.70%)
Professional - Law	19 (11.20%)	14 (11.40%)	5 (10.90%)
Trade / Labor / Craft	15 (8.90%)	10 (8.10%)	5 (10.90%)
Educational Services	9 (5.30%)	8 (6.50%)	1 (2.20%)
Clerical / Secretarial	8 (4.70%)	7 (5.70%)	1 (2.20%)
Professional-Business	8 (4.70%)	7 (5.70%)	1 (2.20%)
Service / Sales / Retail	8 (4.70%)	7 (5.70%)	1 (2.20%)
Healthcare / Social	5 (3.0%)	4 (3.30%)	1 (2.20%)
Construction	5 (3.0%)	3 (2.40%)	2 (4.30%)
Other	2 (1.20%)	1 (.80%)	1 (2.20%)

Table 2. Continuous Demographic Variables

Variable	Total N=169	Mturk N=123	Snowball N = 46
<b>Age</b>			
Mean	33.97	32.63	37.54
SD	9.7	9.27	10.02
Range	20 - 68	20 - 68	21 - 62
<b># Hours Worked / Week</b>			
Mean	40.5	41.18	38.68
SD	9.22	7.94	11.9
Range	16 - 80	16 - 80	16 - 72
<b># Months at Job</b>			
Mean	39.72	41.49	35
SD	37.5	37.34	37.94
Range	1 - 198	1 - 198	3 - 160

### Measures

Variables used to test the research questions were: work underload, job boredom, job engagement, and affective organizational commitment. Additional measures were included to explore the relationship work-related boredom had in work-underload research. These measures included: work overload, boredom proneness, life satisfaction, as well as positive and negative affect. All variables were assessed using existing self-report scales attached in Appendix A through H. Three careless response checks were added to screen for careless responses which may result in unusable data (Huang, Curran, Keeney, Poposki, & DeShon, 2012). An example of the item was “If you are reading this item, please select Strongly Agree.”

## Demographics

Demographic information was collected at the end of the survey and included gender, age, ethnicity, tenure, numbers of hours worked weekly, current job type, and education level. Please see Appendix I for wording of the demographic items. Furthermore, there was one short answer question asking participants to describe the last time they were bored.

## Work Underload

Work underload was assessed using the Naude Work-related Underload Scale (NWUS) developed by Megan N. Naude (2015). NWUS is an 18-item scale measuring three dimensions of work underload. The first dimension includes six items assessing perceived workload. An example item from this dimension is “I find myself with nothing to do.” The second dimension includes seven items assessing desired workload. An example item from this dimension is “I wish that I had more to do.” The last dimension includes five items assessing expected workload. An example item from this dimension is “I expected to be busier in this job.” NWUS was assessed on a 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree in each dimension, and each dimension was computed separately and then combined according to the hypothesis being analyzed. The reported reliability for NWUS is  $\alpha = .94$  for the perception of workload dimension,  $\alpha = .97$  for desired workload dimension, and  $\alpha = .96$  for expected workload dimension. A reliability analysis conducted with data from this study indicated a reliability coefficient of  $\alpha = .93$  for the perception of workload dimension,  $\alpha = .97$

for desired workload dimension, and  $\alpha = .96$  for expected workload dimension. Furthermore, the reliability coefficient for the entire work underload scale, consisting of all three dimensions, was  $\alpha = .97$ . Validity evidence was demonstrated by comparing NWUS to Caplan et al.'s underload scale resulting in positive relationships in all dimensions: perceptions (.67), desires (.56), and expectations (.61) (Naude, 2015). Please see Appendix A for all items by dimension.

### Work Related Boredom

Work related boredom was assessed using the The Dutch Boredom Scale (DUBS) created by Reijsegar et al. (2013). DUBS was created using two previous scales, job boredom and boredom proneness, and contains six items that measures employee emotions and cognitions in the work environment. An example item from DUBS is "It seems as if my working day never ends." DUBS was assessed on a 5-point Likert scale with 1 = Never and 5 = Always. The reported reliability for DUBS is  $\alpha = .87$  (Reijsegar et al., 2013). A reliability analysis conducted with data from this study indicated a reliability coefficient of  $\alpha = .86$ . Validity evidence was found across 87 organizations and 11,000 employees resulting in evidence that DUBS was significantly related to poor workability, decreased health, and greater turnover. Furthermore, DUBS was significantly related ( $r = .88$ ) to Lee's Job Boredom Scale (Vodanovich & Watt, 2016). Please see Appendix B for full scale.

### Job Engagement

Job engagement was assessed using the Utrecht Work Engagement Scale (UWES) short form, developed by Schaufeli, Bakker, and Solanov (2006). UWES is an 9-item scale measuring three dimensions of job engagement. The first dimension includes three items assessing Vigor. An example item from this dimension is “When I get up in the morning, I feel like going to work” The second dimension includes three items assessing dedication. An example item from this dimension is “My job inspires me.” The last dimension includes three items assessing absorption. An example item from this dimension is “I get carried away when I am working.” UWES will be assessed on a 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree, and all dimensions were computed for an overall engagement score. The reported overall reliability for UWES is  $\alpha = .92$  (Scaufeli et al., 2006). A reliability analysis conducted with data from this study indicated a reliability coefficient of  $\alpha = .94$ . The scale has been validated in numerous countries using confirmatory factor analysis which resulted in a good fit for the 3-factor structure (Bakker et al., 2008). Please see Appendix C for all items by dimension.

### Organizational Commitment

Organizational Commitment was assessed using the Three-Component Model (TCM) of commitment, developed by Meyer and Allen (1997). TCM is a 24-item scale measuring three dimensions of organizational commitment; affective commitment, normative commitment, and continuance commitment.



The first dimension includes eight items assessing the desire-based affective commitment. An example item from this dimension is “I would be very happy to spend the rest of my career with this organization” The second dimension includes eight items assessing the obligation-based normative commitment. An example item from this dimension is “I do not believe that a person must always be loyal to his or her organization.” The last dimension includes eight items assessing the cost-based continuance commitment. An example item from this dimension is “I feel that I have too few options to consider leaving this organization.” TCM was assessed on a 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree in each dimension. As recommended by Allen and Meyers’ academic user guild (2004), each dimension was measured separately to complete a commitment profile of the sample. Furthermore, although all three dimensions demonstrate a negative correlation with withdrawal and turnover intention, they all correlate differently with other work behaviors (Myers et al., 2002). The reported reliability for TCM ranges from  $\alpha = .77$  to  $.88$  for the affective commitment dimension, ranges from  $\alpha = .65$  to  $.86$  for the normative commitment dimension, and ranges from  $\alpha = .69$  to  $.84$  for the continuance commitment dimension. A reliability analysis conducted with data from this study indicated a reliability coefficient of  $\alpha = .90$  for the affective commitment dimension,  $\alpha = .87$  for the normative commitment dimension, and  $\alpha = .81$  for the continuance commitment dimension. Furthermore, the reliability coefficient alpha for the entire TCM commitment scale, consisting of all three

dimensions, was  $\alpha = .85$ . Validity and generalizability of the TCM model was conducted through a meta-analysis which showed evidence that the TCM was positively correlated with occupational commitment demonstrating validity, and although the sample size of studies outside the US was small, a correlation was detected suggesting the TCM may be generalizable outside the US with proper translation. Please see Appendix D for all items by dimension.

### Work Overload

Work overload was assessed using a role overload scale created by Fisher (2014). This scale contains four items which are reverse coded to measure employee's perceived work overload. An example item from this scale is "I am able to keep up with my work responsibilities". This scale was assessed on a 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree. The reported reliability for this role overload scale is  $\alpha = .79$  (Fisher, 2014). A reliability analysis conducted with data from this study indicated a reliability coefficient of  $\alpha = .79$ . Validity evidence was found across 337 organizations across 18 different countries (N= 6,264) showing role overload has negative effects on employee attitudes and commitment regardless of cultural influences (Fisher, 2014). Please see Appendix E for full scale.

### Boredom Proneness

Boredom proneness was assessed using The Short Boredom Proneness Scale (SBPS) created by Struk, Carriere, Cheyne, and Danckert (2017). SBPS was designed to capture the general tendency of boredom and to distinguish

between individuals who report high or low proneness to boredom. Including this measure in the current study is appropriate because individuals who are more prone to boredom may report higher levels of work-related boredom, influencing how they perceive their work environment. An example item from SBPS is “Much of the time, I just sit around doing nothing”. SBPS was assessed on a 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree. The reported reliability for SBPS is  $\alpha = .88$  (Struk, et al., 2017). A reliability analysis conducted with data from this study indicated a reliability coefficient of  $\alpha = .90$ . Validity evidence was found using 2,592 undergraduate students from the University of Waterloo, by measuring the short eight item SBPS against: The Mind-Wandering- Spontaneous Scale,  $r = .43$ ; ADHD Self Report Scale,  $r = .48$ ; and the Five facet Mindfulness Questionnaire,  $r = -.56$  (Struk et al., 2017). Please see Appendix F for the full scale.

### Life Satisfaction

Life satisfaction was assessed using The Satisfaction with Life Scale (SWLS) created by Diener (1985). SWLS was designed to capture the cognitive aspect of subjective well-being from a global perspective. Including this measure in the current study is appropriate because individuals who are not satisfied with their life might have a tendency to perceive most environments negatively therefore effecting their perceptions of their work environment. An example item from SWLS is “In most ways my life is close to my ideal”. SWLS was assessed on a 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree. The

reported reliability for SWLS is  $\alpha = .85$  (Pavot & Diener, 1993). A reliability analysis conducted with data from this study indicated a reliability coefficient of  $\alpha = .89$ . Please see Appendix G for full scale.

### Positive and Negative Affect

Positive affect and negative affect were measured by The Positive Affect and Negative Affect Scale (PANAS) used by Kuppens, Realo, and Diener (2008). This scale contains two dimensions: six items that represent positive affect; and eight item that represent negative affect. The 14-item measure is designed to measure an individual's emotion, which is relevant for this study as emotions influence the perception of one's environment. The scale asks the question "How often do you feel..." followed by a range of emotions. An example of a positive emotion is "Pleasant" and an example of a negative emotion is "Anger". This scale was assessed on a 5-point Likert scale with 1 = Never and 5 = Always. The reported reliability for the positive dimension is  $\alpha = .73$  while the reliability for the negative dimension is  $\alpha = .76$  (Kuppens, et al., 2008). A reliability analysis conducted with data from this study indicated a reliability coefficient alpha of  $\alpha = .90$  for the positive dimension and  $\alpha = .86$  for the negative dimension. Validity evidence was found across 46 countries (N= 9,857) showing that the positive emotions were positivity related to life satisfaction while the negative emotions were negatively related to life satisfaction (Kuppens, et al., 2008). Please see Appendix H for full scale.

### Open-Ended Question

This item read “In a few sentences, please describe the last time you were bored at work. Please include why you were bored”. This open-ended question was designed to decipher if the participant considers boredom as an attitude, a behavior, or an affective response to their situation. It was measured qualitatively looking for key words that describe an attitude, a behavior, or an emotion.

### Procedure

Participants were solicited through Amazon’s Mechanical Turk (MTurk) and through a snowball sampling technique. MTurk participants accessed this study through a survey link on the MTurk platform between May 12 and May 13, 2018. Each participant was paid \$2.00 for completing the survey and passing attention checks. Snowball participants were invited to the study between April 13 and May 13, 2018 through an email or through social media and provided with a link to the survey. Both links led participants to the same Qualtrics survey in which they read the consent form and agreed to voluntarily participate. The Qualtrics survey asked participants to answer the items from the previously discussed measures with three attention checks to identify careless responses.

## CHAPTER THREE

### RESULTS

#### Test of Hypotheses

Data cleaning and screening was conducted prior to testing the hypotheses in SPSS. A total of 19 participants did not complete the survey and an additional 10 participants did not pass two of the three attention checks and were therefore removed from further analyses. Furthermore, an additional five participants reported working zero hours per week, which did not fit the criteria for this study and so they were also excluded from further analyses. Outliers were identified by a cut off z score of  $\pm 3.3$  (Tabachnick & Fidell, 2007). Five outliers were identified: (1) in number of hours worked per week, reporting 130 hours worked per week ( $z = 6.73$ ); and (4) in months at current job, all reporting over 20 years at current job ( $z = 3.53$ ,  $z = 3.82$ ,  $z = 3.82$ ;  $z = 6.17$ ). Since working 130 hours per week seems unrealistic and participants who have worked in their current position over 20 years may represent a different population than the rest of the sample, all five outliers were removed from any further analyses.

Multivariate outliers were screened using Mahalanobis distance and none were found. A missing value analysis (MVA) was conducted and found missing data was less than 5% and missing completely at random, therefore the subsequent analyses was conducted using complete cases only ( $n = 169$ ). Normality was assessed using z score of  $\pm 3.3$  and found positive skewness in age and number of months at current job. This seems reasonable since most of

the participants were between 25-35 years old and reported less tenure. Multicollinearity was assessed among all predictors and the variance inflation factors (VIF) between all predictors was less than five except between perceptions of work underload variable and expectations of work variable. Furthermore, bivariate correlations showed the correlation between perceptions of work underload variable and desires for more work variable was above .80. These three variables were expected to be highly correlated as they are dimensions from the same scale being treated as individual predictors. Please see Table 3 below for inter-correlations among the hypothesized variables. A full bivariate correlations table including all scales used in this study can be found in Appendix J.

Table 3. Correlation Matrix of Tested Variables

Variable	Boredom Scale	Engagement Scale	Affective Commitment Scale	Full Underload Scale	Underload Expectation Dimension	Underload Desires Dimension	Underload Perception Dimension
Boredom Scale	1						
Engagement Scale	-.501**	1					
Affective Commitment Scale	-.522**	.771**	1				
Full Underload Scale	.573**	0.071	-0.103	1			
Underload Expectation Dimension	.465**	0.096	-0.110	.860**	1		
Underload Desires Dimension	.470**	0.124	-0.009	.945**	.703**	1	
Underload Perception Dimension	.647**	-0.032	-.184*	.938**	.712**	.854**	1

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

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

### Hypothesis 1

It was hypothesized that perceptions of work underload along with desire for more work, would be more negatively associated with job engagement, than perceptions of work underload alone. A two-step hierarchical multiple regression in SPSS was conducted with job engagement as the dependent variable.

Perceived workload was entered in step one, while desires for more work was entered in step two. Results of the least squares regression analysis show that



there was not a significant relationship between perceptions of work underload and job engagement,  $F(1,167) = .172$ ,  $p = .68$ , however there was a significant relationship when adding desires for more work in the model with perceptions of work underload and job engagement,  $F(2,166) = 7.84$ ,  $p < .01$ , and accounting for 8.6% of the variance in job engagement. Although this result implies that desires for more work added 8.5% more explained variance in job engagement, upon closer inspection of the correlation between perceptions of workload and desires for more work, show that desires for more work is suppressing the variance explained in perceptions of work underload. As a result, Hypothesis 1 was not supported as shown in Table 4.

Table 4. Summary of Hierarchical Regression for Variables predicting Job Engagement

Variable	B	SE B	$\beta$	T	Partial	Part	R	R <sup>2</sup>	$\Delta R^2$
Step 1							0.032	0.001	
Perception	-0.04	0.10	-0.03	-0.42	-0.03	-0.03			
Step 2							0.29	0.09**	0.09**
Perception				-					
Desires	-0.66	0.19	-0.51	3.59**	-0.27	-0.27			
	0.61	0.15	0.56	3.94**	0.29	0.29			

\*\* . Significant at the 0.01 level (2-tailed).

\* . Significant at the 0.05 level (2-tailed).

## Hypothesis 2

It was hypothesized that perceptions of work underload along with expectations for more work, would be more negatively associated with affective commitment, than perceptions of work underload alone. A two-step hierarchical multiple regression in SPSS was conducted with affective commitment as the dependent variable. Perceived workload was entered in step one, and expectation for more work was entered in step two. Results of the least squares regression analysis show that there was a significant relationship between perceptions of work underload and affective commitment,  $F(1, 167) = 5.85, p < .05$ , explaining 3% of the variance in affective commitment. However, there was not a significant relationship when adding expectations for more work in the model with perceptions of work underload and affective commitment,  $F(2, 166) = 2.99, p = .69$ . These results suggest that expectations for more work did not add any more explained variance to the model. As a result, Hypothesis 2 was not supported as seen in Table 5.

Table 5. Summary of Hierarchical Regression for Variables predicting Affective Commitment

Variable	B	SE B	$\beta$	T	Partial	Part	R	R <sup>2</sup>	$\Delta R^2$
Step 1							0.18	0.03*	
Perception	-0.19	0.08	-0.18	2.42*	-0.18	-0.18			
Step 2							0.19	0.04	0.001
Perception	-0.23	0.11	-0.22	1.98*	-0.15	-0.15			
Expectations	0.05	0.13	0.04	0.40	0.03	0.03			

\*\* . Significant at the 0.01 level (2-tailed).

\* . Significant at the 0.05 level (2-tailed).

### Hypothesis 3

It was hypothesized that perceptions of work underload along with desires and expectation for more work, would be more positively associated with work related boredom than perceptions of work underload alone. A two-step hierarchical multiple regression in SPSS was conducted with work-related boredom as the dependent variable. Perceptions of work underload was entered in step one, and desires for more work and expectation for more work was entered in step two. Results of the least squares regression analysis show that there was a significant relationship between perceptions of work underload and work-related boredom,  $F(1, 167) = 120.09, p < .01$ , accounting for 41.8% of the variance in work-related boredom. Furthermore, adding desires for more work and expectations of more work significantly increased the explained variance by 2.8%,  $F(3,165) = 44.32, p < .05$ . Together the three variables accounted for

44.60% of the variance in work related boredom. As a result, Hypothesis 3 was supported as shown in Table 6.

Table 6. Summary of Hierarchical Regression for Variables predicting Work-related Boredom

Variable	B	SE B	$\beta$	T	Partial	Part	R	R <sup>2</sup>	$\Delta R^2$
Step 1							0.65	0.42**	
Perception	0.58	0.05	0.65	10.96**	0.65	0.65			
Step 2							0.67	0.45*	0.03*
Perception	0.79	0.11	0.88	7.52**	0.51	0.44			
Desires	-0.25	0.09	-0.33	-2.88*	-0.22	-0.17			
Expectation	0.08	0.09	0.07	0.86	0.07	0.05			

\*\* . Significant at the 0.01 level (2-tailed).

\* . Significant at the 0.05 level (2-tailed).

#### Hypothesis 4

It was hypothesized that work related boredom would mediate the effect of perceptions of work underload along with desire and expectation for more work on job engagement. Hayes' Process Macro in SPSS was used to test this mediation hypothesis with the full work underload scale entered as the independent variable, job engagement as the dependent variable and work-related boredom as the mediating variable (Hayes, 2013). Results indicated that work underload was a significant predictor of work-related boredom,  $b = .18$ ,  $SE = .02$ ,  $t(167) = 9.02$ ,  $p < .01$ , and that work-related boredom was a significant

predictor of job engagement,  $b = -1.16$ ,  $SE = .10$ ,  $t(166) = -11.40$ ,  $p < .01$ .

Furthermore, work underload remained a significant predictor of job engagement with the mediated path in the model,  $b = .24$ ,  $SE = .03$ ,  $t(166) = 7.53$ ,  $p < .01$ , indicating that the traditional mediation hypothesis was not supported. The indirect effect between work underload and job engagement through work-related boredom was tested using a bootstrap estimation approach with 5,000 samples. These results indicated the indirect coefficient was significant,  $b = -.21$ ,  $SE = .03$ , 95% CI =  $-.27, -.16$ , although the total effect was not significant,  $F(1,167) = .85$ ,  $p = .36$ . This is an indication of inconsistent mediation since there was a statistically significant negative indirect effect ( $-.21$ ) and a statistically significant positive direct effect ( $.24$ ). The combined effect of the latter two effects make the total effect non-significant and close to zero ( $.03$ ). Please see Figure 2 for a visual interpretation of the mediation process depicted in Hypothesis 4.

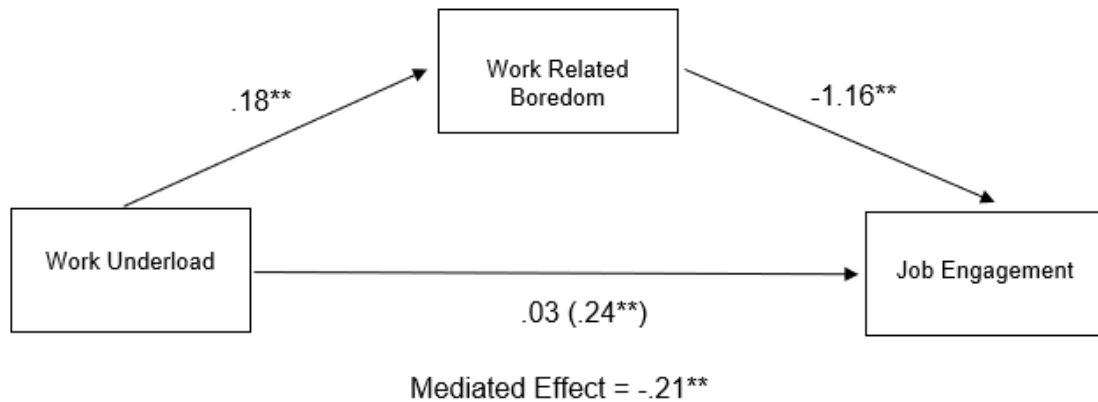


Figure 2. Standardized Regression Coefficients for the Relationship Between Work Underload and Job Engagement Mediated by Work-Related Boredom. The Standardized Regression Coefficient Between Work Underload and Job Engagement, Controlling for Work-Related Boredom, is in Parentheses.  $** p < .01$ .

### Hypothesis 5

It was hypothesized that work related boredom would mediate the effect of perceptions of work underload along with desire and expectation for more work affective commitment. Hayes' Process Macro in SPSS was used to test this mediation hypothesis with the full work underload scale entered as the independent variable, affective commitment as the dependent variable and work-related boredom as the mediating variable (Hayes, 2013). Results indicated that work underload was a significant predictor of work-related boredom,  $b = .18$ ,  $SE = .02$ ,  $t(167) = 9.02$ ,  $p < .01$ , and that work-related boredom was a significant predictor of affective commitment,  $b = -.81$ ,  $SE = .09$ ,  $t(166) = -8.89$ ,  $p < .01$ .

Furthermore, work underload remained a significant predictor of affective commitment with the mediated path in the model,  $b = .11$ ,  $SE = .03$ ,  $t(166) = 3.76$ ,  $p < .01$ , once again indicating that the traditional mediation hypothesis was not supported. The indirect effect between work underload and affective commitment through work-related boredom was tested using a bootstrap estimation approach with 5,000 samples. These results indicated the indirect coefficient was significant,  $b = -.15$ ,  $SE = .02$ , 95% CI =  $-.20, -.10$ . Again, this is an indication of inconsistent mediation since there was a statistically significant negative indirect effect ( $-.15$ ) and a statistically significant positive direct effect ( $.11$ ). The combined effect of the latter two effects make the total effect non-significant and close to zero ( $-.04$ ). Please see Figure 3 for a visual interpretation of the mediation process depicted in Hypothesis 5.

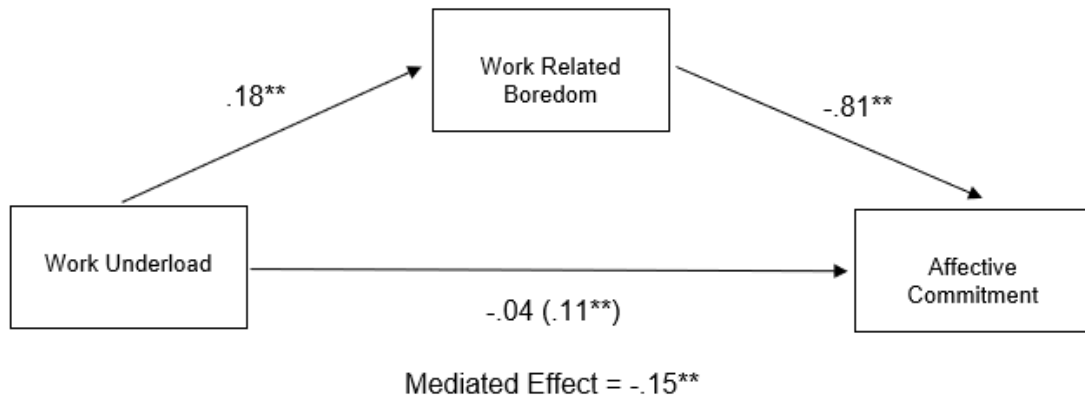


Figure 3. Standardized Regression Coefficients for the Relationship Between Work Underload and Affective Commitment Mediated by Work-Related Boredom. The Standardized Regression Coefficient Between Work Underload and Affective Commitment, Controlling for Work-Related Boredom, is in Parentheses.  $** p < .01$ .

#### Qualitative Analysis / Open-Ended Question

This study also included an open-ended question designed to decipher how the participants define boredom. The question asked participants to describe the last time they were bored at work and why they were bored. Responses were measured qualitatively looking for key words and themes. One graduate student and eight undergraduate students identified seven main themes that appeared in the open-ended question. Inter-rater reliability was accounted for by having two different graduate students rate the statement with which theme the statement belonged to and then comparing the two ratings. This resulted in an inter-rater reliability of .70. The most reported theme was “lack of work” with a range of 75 to 93 responses. This theme was broken into two sub themes, “lack of work due to slow paced work” (range = 54-63 responses) and “lack of work due to finishing



work early” (range = 21-30 responses). The next most reported theme was “unfulfilling work” (range = 18-30 responses), followed by “repetitive work” (range = 20-21 responses), “lack of social interaction” (range = 8-12 responses), and “lack of autonomy” (range = 2-6 responses). “Non-applicable answers” consisted of those who reported no boredom or did not properly answer the question and ranged from 24 to 29 responses. Please see Appendix K for a summary of the qualitative analysis of open-ended question.

#### Additional Analysis

Hypothesis testing concluded that there was not a significant relationship between the perceptions and desires dimensions of NWUS underload scale (H1) or the perceptions and expectations dimensions of NWUS underload scale (H2) with the work-related outcomes of job engagement and affective commitment. To explore this relationship more, linear regressions were conducted using the full NWUS underload scale which included all three dimensions. First, job engagement was entered as the dependent variable and the full NWUS underload scale was entered as the predictor variable. Results indicated that there was not a significant relationship,  $F(1,167) = .85$ ,  $p = .36$ . Furthermore, only .5% of the variance in job engagement was explained by work underload. Next, affective commitment was entered as the dependent variable and the full NWUS underload scale was entered as the predictor variable. Results indicated that there was not a significant relationship,  $F(1,167) = 1.79$ ,  $p = .18$ . Furthermore,

only 1.10% of the variance in affective commitment was explained by work underload.

## CHAPTER FOUR

### DISCUSSION

The purpose of the present study was to examine if a new, multi-dimensional work underload scale could better explain the relationship between perceived work underload and work outcomes, specifically work engagement and affective commitment, and the role work-related boredom plays in that relationship. The findings of this study suggest that a multi-dimensional work underload scale, which included desire for more work and expectation of more work, did not better explain the relationship between perceived work underload and work engagement or affective commitment, and only slightly improved the relationship between perceived work underload and work-related boredom and work-related boredom mediated this relationship.

Hypothesis 1 (H1) resulted with close to zero relationship between perceived workload and job engagement,  $r^2=.001$ . Significant results were found when adding in the second predictor, desire for more work,  $r^2 = .086$  explaining 8.6% of the variance. At first glance these results appear to support H1, however upon closer inspection the standardized beta for perceived workload changed from non-significant ( $\beta= -.03$ ) to significant ( $\beta= -.51$ ) when desire for more work was added. This suggests that desire for more work suppressed irrelevant variance in perceived workload. Suppression can occur when the predictors are highly correlated and can often appear to be supporting evidence of a hypothesis (Cohen & Cohen, 1975). To further investigate that suppression occurred and

that the results were not reporting the unique contributions of perceived workload and desires for more work, a third step interaction was tested. The interaction resulted in non-significance,  $F(3,165) = 5.23$ ,  $p=.76$ , supporting the conclusion that suppression occurred. Since perceived workload and desire for more work were highly correlated ( $r = .85$ ), the model could not correctly estimate the independent relationship between the predictors and job engagement, thus causing multicollinearity.

Hypothesis 2 (H2) resulted in a non-significant relationship between perceived workload and affective commitment when expectation of work was added. The first predictor, perceived workload, had a significant relationship to affective commitment,  $r^2=.03$ . However, when the second predictor, expectation of work, was added, the results became non-significant even though expectation of work added 1% explained variance. The correlations between the predictors, perceived workload and expectation for more work were highly correlated (.71) suggesting these are not independent variables and the model could not correctly estimate the relationship. To explore this further, a third step interaction between perceived workload and expectations for more work was tested, and again resulted in non-significance  $F(3,165) = 2.35$ ,  $p=.31$ . Therefore, the model could not correctly identify the unique contributions of perceived workload and expectations for more work causing multicollinearity.

The result from H1 and H2 can be explained by the high correlations between the three predictors. Naude (2015) suggested using her three-

dimensional underload scale as three separate variables when examining their relationship to workplace outcomes: one variable of perceived workload; one variable of desire for more work; and one variable of expectation of work (Naude, 2015). However, the three dimensions used in her NWUS scale were highly correlated. Perceived workload has a correlation of .85 to desire for more work and a correlation of .71 to expectation of work, and correlation between desire for more work and expectation of work is .70. The multicollinearity between the predictors suggests that the predictors themselves are not independent and therefore the NWUS scale should be used as a whole and not be separated as Naude suggested when looking at workplace outcomes (Naude, 2015).

The person-environment fit theory explains that the relationship between the characteristics of an individual and characteristics of the environment can affect the individual's perceptions (Edwards, 1991) and the cognitive appraisal theory tells us that individuals will adjust their emotions based on the appraisal of their environment (Lazarus, 1966). These theories suggest when researching potential workplace stressors, such as work underload, accounting for characteristic of the individual along with characteristics of the environment should improve the model. These results may suggest that individual desires and expectations are not independent of individuals perception, and instead may be connected as one emotional experience. Therefore, additional analyses were conducted after hypothesis testing to investigate the relationship between the full NWUS scale and the work-related outcomes of work engagement and affective

commitment. Results showed that there was not a significant relationship between the NWUS scale and work engagement nor the NWUS scale and affective commitment. These findings allude that the NWUS underload scale should be further examined for validity when researching job engagement and affective work commitment.

The results from hypothesis 3 (H3) show that adding desire for more work and expectation of work to perceived workload better explained the relationship with work-related boredom. Perceived workload was a significant predictor and explained 41.8% of the variance, however adding in desire for more work and expectation of work explained an additional 2.8% variance, for a total of 44.6% explained variance. This finding supports recent research on work-related boredom. Previous researchers have explored environmental elements as causes for work-related boredom, however more recently researchers have investigated individual traits in relation to work-related boredom (Guglielmi et al., 2013; Vodanovich & Watt, 2016). For example, individuals who report more boredom-prone tendencies and report higher levels of negative affect may experience work-related boredom more frequently (Vodanovich & Watt, 2016). Reflecting again on the person-environment fit theory, when individual's characteristics do not match the characteristics of the environment, they will have a more negative experience than those whose characteristics match the environment. Therefore, it seems plausible that individuals who desire a heavier workload or who were expecting more work in their current environment would

report more work-related boredom than those who only perceive a low workload. Although statistically significant, adding desire for more work and expectation of work to perceived workload only explained 2.8% more variance. This suggests that previous work-related boredom research using a unidimensional work-underload scale may be sufficient in predicting the relationship between work underload and work-related boredom.

In hypothesis 4 (H4) and hypothesis 5 (H5) it was hypothesized that work-related boredom would mediate the effect between the three dimensional work underload variable with job satisfaction (H4) and affective commitment (H5). The results in both mediation models concluded that traditional mediation interpretation could not be used as the direct effect was larger than the total effect suggesting inconsistent mediation (Mackinnon, Krull, & Lockwood, 2000). Although there appears to be a significant increase in work-related boredom as work underload increased and a significant decrease in job engagement (H4) and affective commitment (H5) as work-related boredom increased, both tests resulted in a statistically significant negative indirect effect and a statistically significant positive direct effect making the total effect not significant and close to zero. In traditional mediation, these models would not support the hypothesis since the total effect was not significant (Preacher & Kelley, 2011). However, significance testing should not always be used as an ultimate decision maker in mediation. The indirect effect is of the most interest in a mediation model, so regardless of the significance of the total effect, some researchers suggest

looking primarily at the indirect effect as a means for interpretation (Preacher & Kelley, 2011). Furthermore, recent researchers have supported using bootstrapping on the confidence intervals to decipher if mediation occurred without an assumption of the effect size (Hayes & Rockwood, 2017). Using this methodology, bootstrapping the confidence intervals for both H4 and H5, concluded that the intervals did not pass zero and mediation did occur. This supports previous research, that boredom is needed to show a relationship between underload and work-related outcomes (Guglielmi, et al, 2013; Van Wyk, et al, 2016).

Lastly, thematic qualitative analysis of the open-ended question regarding boredom suggests most participants thought of boredom as a behavior, giving answers that were categorized as having a lack of work. This is consistent with previous research on work related boredom in which external workplace characteristics are responsible for work related boredom (Fisher, 1993; Guglielmi et al., 2013; van Wyk et al., 2016). However, additional themes in this data such as unfulfilling work, lack of job autonomy, and lack of social interaction were also discovered. This implies that some of the participants considered boredom more of an internal attitude or emotion, supporting recent research that boredom is situational and individual characteristics may play a larger role than previously thought (Cummings, et al., 2016; Harju, Hakanen, & Schaufeli, 2016; Vodanovich & Watt, 2016). This study aligns with much of the research on boredom as it too fails to provide a clear and consistent definition for work related boredom. This



could be because boredom is multidimensional, having an external physical dimension and an internal, emotional dimension (Cummings, et al., 2016).

## Implications

### Theoretical Implications

The findings of this study make a theoretical contribution to the work-related boredom literature in that our findings suggest that desires and expectations play a role in individual's perceptions of work-related boredom and may be accounted for in previous unidimensional work-underload scales. The person-environment fit theory explains that an individual's behavior is the product of both the individual and their environment (Kristof-Brown & Guay, 2011). Fit occurs when there is a match between the individual's skills, needs, desires, or preferences and their environment. Furthermore, the cognitive appraisal theory states that an individual's evaluative judgement of a situation or event determines their response to that situation (Lazarus, 1966). Individuals who expected one type of situation (i.e., workload), but received another would have a different appraisal of that situation than individuals who expected a situation and received what they were expecting. Most research to date has focused purely on the individual's perception of their current workload and the results of Lazarus' study suggest that one's perception may include the individual's desire for work and the appraisal of the situation, validating previous research.

Many studies have focused on consequences of work-related boredom with positive relationships to counterproductive work behaviors and turnover, and

negative relationships to job satisfaction and commitment (Vodanovich & Watts, 2016), or links between characteristics of the work environment and boredom (van Hooff & van Hooft, 2017). Fewer studies have looked at individual situations as precursors to boredom and most of that research has looked at personality traits such as negative affectivity and its correlation with work-related boredom (Bowling, et al., 2015; Spector & Jex, 1998). The results of the present research suggest that individual's attitudes and emotions may play a larger role in workplace boredom than previously thought. The construct of boredom may be multidimensional, and more research on individual's attitudes, emotions, and perceptions in connection to boredom, along with examining external work design elements, such as individual job duties and collaboration with peers, could help dissect specific dimensions of boredom.

Lastly, my findings are the first using the NWUS scale outside the initial validation effort. Although my results did not find supporting evidence of Naude's scale as a viable tool to measure the relationship between work underload and job engagement or affective organizational commitment, it showed evidence that a more complex, multi-dimensional scale could better explain the complex construct of boredom. Additional research on work related boredom using the NWUS scale may help identify personal factors that can lead to boredom and assist future researchers in creating a consistent definition of work-related boredom.

## Practical Implications

The results of this study highlight the importance of having engaged employees in your organization. Recognizing that employee's desires and expectations play a role in forming their perceptions of their work environment will help organizational leaders find and keep employees engaged through selection and development practices. Organizations are tasked with finding the right person in the right job as to avoid making a hiring mistake that could cost the organization thousands of dollars (Riordan & Cometet, 1983). Once the right person is found, organizations need to keep that person engaged in their work so they are producers and not abusers (Bruursema, Kessler, & Spector, 2011).

One example is a technique called a realistic job preview (RJP). This is a technique in which during the selection process, candidates are presented both the positive and negative characteristics of the job. RJP's give a realistic view of the job allowing the candidate to appraise the job before accepting the position (Bilal & Bashir, 2016). Having a clearer and more accurate view of the workload entailed to perform the job would directly addresses the candidates' expectations about the amount of work they can expect. If the candidate feels the job is a match to their desires and accepts the position, then their perceptions of workload would be realistic, possibly preventing perceptions of work underload and preventing work-related boredom.

Bored employees tend to set bad habits and continue to experience feelings of boredom. This pattern can spin an employee out of control and, as a

result, they may never be able to be re-engaged in the job tasks (Cummings et al., 2016). Results from my study suggests that organizations that use practices such as job crafting, goal setting, and job autonomy may prevent their employees from slipping into boredom at work. Job crafting allows employees to seek out challenges in the job to help motivate them to complete their tasks (Harju et al., 2016). Goal setting and job autonomy also allow employees to shape their jobs to custom fit their internal needs. Allowing employees to customize their tasks to align with their skills and talents, showing them the importance of their role and how to set goals to impact others in the workplace, and allowing them a little bit of freedom in how they complete their goals and tasks, will motivate and increase engagement while decreasing job boredom (Fisher, 1993; Litchfield, Cooper, Hancock, & Watt, 2016).

Lastly, it is expected that employees will experience some form of boredom at work at some point in their job and may not be self-motivated to set goals and challenges for themselves. Continual feelings of boredom have been linked to lower motivation and negative work attitudes due to a lack of coping skills in some individuals (Cummings, 2016; van Hooff & van Hooft, 2017). This could lead to counter productive work behaviors (CWB) in bored employees who attempt to replace their non-stimulating environment with more exciting and potentially unproductive and destructive behavior. Individuals who are continually bored at work might try and cope with their boredom by doing anything to avoid their work environment including horseplay around the office, purposely failing at

their job, withdrawal from company events, and sabotage to company property (Bruursema et. al, 2011). Organizations should be watchful for these behaviors and attempt to understand those employees' desires and expectations. Those individuals may need additional resources and assistance in coping skills, or may need to be exited out of the company incurring more turnover costs.

Organizations should be aware of the potential dangers of CWBs caused by workplace boredom and attempt to avoid them by using engaging hiring practices, job tasks, and policies.

### Limitations

This study had some limitations that should be discussed. First, in this study I used a self-reporting questionnaire which although is considered a practical way to gather information, can be subjective as it requires the participants to provide accurate and honest evaluations of their perceptions. Using questionnaires has been criticized throughout research as it can cause bias and measurement error (Spector, 1994). Furthermore, in this study I used the MTurk to recruit participants and although the MTurk is a viable way to collect a representation of working adults, it has some drawbacks. MTurk participants are more educated and a majority of the workers live in the United States and India (Goodman, Cryder, & Cheema, 2013). Approximately 54% of the participants in this study identified as Caucasian and 43% of the participants reported they had a 4-year degree. A sample that includes a better distribution of ethnicities and education levels may be a better representative of working adults.

Second, this study was the first to use the NWUS scale, a newly developed scale to measure work underload (Naude, 2015). Using Naude's suggestion, we broke apart the multidimensional scale into the three dimensions and used them as separate predictors in the regression model. Since these predictors came from the same multidimensional scale, designed to hone into an individual's perception of their workload, they were highly correlated which caused suppressor effects in the results. Both the desires dimension and the expectation dimension that were treated as their own predictors, suppressed the variance explained in perceptions dimension, resulting in no significant findings for the first two hypothesis. Using the NWUS scale as a whole for the perception predictor and using two separate uncorrelated scales to measure desires and expectations could show more support for the hypothesis that individuals desires and expectations play a role in how individuals perceive their workload.

Lastly, limited scales were used in this study. Some of the scales used in this study had multiple dimensions and this study only used one of those dimensions. For example, this study only looked at affective commitment as the criterion, however normative or continuous commitment may be connected closer to work-place boredom than affective commitment. Future studies should investigate additional dimensions of proposed criterion when studying a complex construct like work-related boredom.

## Directions for Future Research

Future researchers should explore the construct of boredom and attempt to agree on a clear definition of this construct. Work related boredom may be multidimensional and may include a personal internal dimension and a work-related external dimension (Vodanovich & Watts, 2016). Although previous research has explored some external influences by investigating the effects of workload and task repetitiveness (Fisher, 1993; Guglielmi et al., 2013), more research on other external factors could help define boredom. Some examples could be investigating boredom on remote workers who are more isolated and have less social interaction or investigating boredom in between jobs that are routinely structured with very little job autonomy versus jobs that are innovative and full of creativity. Perhaps a more complex research model that includes both external influences and internal characteristics, such as negative affect or boredom proneness, would benefit the research on work related boredom and could help define this complex construct.

Nearly 70% the participants in this study reported having a college degree with a 39 months average length at the current job. Although education level and tenure were not measures in this study, previous research has explored underemployment as a precursor to work related boredom (van Wyk et al, 2016). Individuals whose experience and education level outweighs the job duties they perform, may feel underchallenged and may find lack of meaning in their tasks (Loukidou, 2009). Future research in internal factors that may affect work related

boredom should include education level or tenure to further explore the relationship between underemployment and work-related boredom.

Furthermore, Parasuraman and Purohit (2000) explored a form of stress that occurred when participants were exposed to work boredom for long periods of time. Boredom stress may develop when an individual continually finds no meaning in their tasks, which may evolve into a negative affective state (Parasuraman & Purohit, 2000). Previous research has also suggested that workload and work stress share a curvilinear relationship (Shultz et al, 2010). This suggests that individuals may feel similar kinds of stress when bored at work than they would when overwhelmed at work. Future research should investigate the physical effects that work-related boredom may have on individuals, which would help organizations develop boredom stress coping strategies.

Lastly, in this study I looked at the effects work related boredom had on the outcomes of work engagement and organizational commitment. Both these outcomes are multidimensional constructs but often treated as unidimensional. For example, engagement has been defined having three dimensions: vigor; dedication; and absorption. Dedication occurs when individuals have strong feelings of significance in what they are doing (Bakkerm, 2008). Work related boredom may contradict dedication as it occurs when individuals feel undervalued and a lack of interest in their tasks (Tsai, 2016). Developing a research model that looks at the effects of work-related boredom at each



dimension of said outcomes may further explain the unique relationship that work related boredom has on each outcome, at a dimensional level.

### Conclusion

Previous research on workload has focused on the employee's perception of their work environment. Recent research has measured work related boredom in conjunction to perceived workload when investigating work related outcomes. This study used a recently developed, multidimensional work underload scale to attempt a better explanation for the relationship between work underload, work related boredom, and the outcomes of job engagement and organizational commitment. Using MTurk and snowball sampling to recruit working adults, data from 169 participants was analyzed for significant changes between work underload, work related boredom, and the aforementioned outcomes when a desires dimension and an expectations dimension was added to a perceptions dimension.

In the result section I concluded that there were no significant changes between perceived work underload and job engagement or organizational commitment using the multidimensional scale of work underload. However, the multidimensional scale better explained the relationship between work underload and work-related boredom. I also concluded that work-related boredom mediated the effects of work underload on job engagement and organizational commitment. Implications from this study suggest that future research should consider exploring the complex construct of work-related boredom through multi-

dimensional scales. Furthermore, organizations should consider the importance employee's expectations and desires play, when employees form perceptions of their job and their work environment.

APPENDIX A  
NAUDE'S WORK UNDERLOAD SCALE

## Naude's Work Underload Scale (NWUS)

(Naude, 2015)

Items on the NWUS scale will be based on the below 5-point Likert Scale:

Strongly Disagree      Neither Agree or Disagree      Strongly Agree  
1                              2                              3                              4                              5

### Perception items:

1. I find myself with nothing to do.
2. After I complete all of my work, there is still time left in my work day.
3. In order to work at my full capacity, I would need more work to do.
4. I have too much time to complete my work.
5. I do not have enough work to do to fill my entire work day.
6. I could be more productive if I had more work to do.

### Desire items:

1. I wish that I had more to do.
2. I wish that more of my time was filled up.
3. I wish that there were not as many lulls in my work day.
4. I would prefer to be busier.
5. I want more work to do.
6. I would be more satisfied if I had more work to do.
7. I would enjoy having a higher workload.

### Expectations items:

1. When I accepted this job, I thought that it would involve more work.

2. When I started my job, I had the impression that I would have more work to do.
3. I thought that I would have more work to do in this job.
4. I expected to be busier in this job.
5. When I accepted this job, I thought that my work would take up more time in my work day.

APPENDIX B  
THE DUTCH BOREDOM SCALE

## The Dutch Boredom Scale (DUBS)

(Reijseger et al., 2013)

Items on the DUB scale will be based on the below 5-point Likert Scale:

Strongly Disagree		Neither Agree or Disagree		Strongly Agree
1	2	3	4	5

### DUBS items:

1. At work, time goes by very slowly.
2. I feel bored at my job.
3. During work time I daydream.
4. It seems as if my working day never ends.
5. I tend to do other things during my work.
6. At my work, there is not so much to do.

APPENDIX C  
UTRECHT WORK ENGAGEMENT SCALE



## Utrecht Work Engagement Scale (UWES-9) Short Form

(Shefa, 2016)

Items on the UWES-9 scale will be based on the below 5-point Likert Scale:

Strongly Disagree		Neither Agree or Disagree		Strongly Agree
1	2	3	4	5

### Vigor items:

1. At my work, I feel bursting with energy.
2. At my job, I feel strong and vigorous.
3. When I get up in the morning, I feel like going to work.

### Dedication items:

1. I am enthusiastic about my job.
2. My job inspires me.
3. I am proud about the work that I do.

### Absorption items:

1. I feel happy when I am working intensely.
2. I am immersed in my work.
3. I get carried away when I'm working.

\*The shortened version uses items 1, 4, 5, 7, 8, 9, 10, 11, and 14 from the original UWES

APPENDIX D  
THE THREE-COMPONENT MODEL SCALE

## The Three-Component Model (TCM) Scale

(Allen & Meyer, 1990)

Items on the TCM scale will be based on the below 5-point Likert Scale:

Strongly Disagree		Neither Agree or Disagree		Strongly Agree
1	2	3	4	5

### Affective Commitment items:

1. I would be very happy to spend the rest of my career with this organization.
2. I enjoy discussing my organization with people outside it.
3. I really feel as if this organization's problems are my own.
4. I think that I could easily become as attached to another organization as I am to this one. (R)
5. I do not feel like "part of the family" at my organization. (R)
6. I do not feel "emotionally attached" to this organization. (R)
7. This organization has a great deal of personal meaning for me.
8. I do not feel a strong sense of belonging to my organization. (R)

### Continuance Commitment items:

1. I am not afraid of what might happen if I quit my job without having another one lined up. (R)
2. It would be very hard for me to leave my organization right now, even if I wanted to.

3. Too much in my life would be disrupted if I decided I wanted to leave my organization now.
4. It wouldn't be too costly for me to leave my organization now. (R)
5. Right now, staying with my organization is a matter of necessity as much as desire.
6. I feel that I have too few options to consider leaving this organization.
7. One of the few serious consequences of leaving this organization would be the scarcity of available alternatives.
8. One of the major reasons I continue to work for this organization is that leaving would require considerable personal sacrifice – another organization may not match the overall benefits I have here.

Normative Commitment items

1. I think that people these days move from company to company too often.
2. I do not believe that a person must always be loyal to his or her organization. (R)
3. Jumping from organization to organization does not seem at all unethical to me. (R)
4. One of the major reasons I continue to work for this organization is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain.
5. If I got another offer for a better job elsewhere I would not feel it was right to leave my organization.

6. I was taught to believe in the value of remaining loyal to one organization.
7. Things were better in the days when people stayed with one organization for most of their careers.
8. I do not think that wanting to be a “company man” or “company woman” is sensible anymore. (R)

APPENDIX E  
ROLE OVERLOAD SCALE

## Role Overload Scale

(Fisher, 2014)

Items on the Role Overload scale will be based on the below 5-point Likert Scale:

Strongly Disagree		Neither Agree or Disagree		Strongly Agree
1	2	3	4	5

### Role Overload item:

1. The amount of work I am expected to do is fair and reasonable. (R)
2. I am able to keep up with my work responsibilities. (R)
3. I do not feel excessive work related stress. (R)
4. I am able to keep up with all my personal responsibilities. (R)

APPENDIX F  
THE SHORT BOREDOM PRONENESS SCALE



## The Short Boredom Proneness Scale (SBPS)

(Struk, Carriere, Cheyne, & Danckert, 2017)

Items on the SBPS scale will be based on the below 5-point Likert Scale:

Strongly Disagree		Neither Agree or Disagree		Strongly Agree
1	2	3	4	5

### SBPS items:

1. I often find myself at “loose ends” not knowing what to do.
2. I find it hard to entertain myself.
3. Many things I have to do are repetitive and monotonous.
4. It take more stimulation to get me going than most people.
5. I don't feel motivated by most things that I do.
6. In most situations, it is hard for me to find something to do or see to keep me interested.
7. Much of the time, I just sit around doing nothing.
8. Unless I am doing something exciting, even dangerous, I feel half-dead and dull

APPENDIX G  
THE SATISFACTION WITH LIFE SCALE

## The Satisfaction with Life Scale (SWLS)

(Diener, 1985)

Items on the SWLS scale will be based on the below 5-point Likert Scale:

Strongly Disagree		Neither Agree or Disagree		Strongly Agree
1	2	3	4	5

### SWLS items:

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So Far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

APPENDIX H  
POSITIVE AFFECT AND NEGATIVE AFFECT SCALE

## Positive Affect and Negative Affect Scale (PANAS)

(Kuppens et al., 2008)

Items on this scale will be based on the below 5-point Likert Scale prompted with

“How often do you feel...”:

Never		Sometimes		Always
1	2	3	4	5

### Positive Affect:

1. Pleasant
2. Happy
3. Cheerful
4. Pride
5. Gratitude
6. Love

### Negative Affect:

1. Sad
2. Anger
3. Unpleasant
4. Guilt
5. Shame
6. Worry
7. Stress
8. Jealousy

APPENDIX I  
DEMOGRAPHIC QUESTIONS

## Demographic Questions

Gender:

- Male
- Female

Age: \_\_\_\_\_ years

Ethnicity:

- Asian
- African American
- White / Caucasian
- Middle Eastern
- American Indian
- Hispanic / Latino
- Other

Job Type:

- Professional Internship
- Service / Sales (Retail)
- Clerical / Secretarial
- Trade / Labor / Craft
- Managerial
- Professional (Health, Science, Teaching, Business)
- Armed Forces
- Other

Number of Hours worked weekly: \_\_\_\_\_

How many months in current position: \_\_\_\_\_

Education Level:

- Less than High School
- High School Diploma
- Some College
- Associates or Vocational Degree
- Bachelor's Degree
- Master's Degree (MA / MS)
- Professional Degree (MD, JD)
- Doctorate Degree (Ph.D, Ed.D)

APPENDIX J  
CORRELATION TABLE FOR VARIABLES IN THIS STUDY



### Correlation Table for Variables in this Study

Variables	BS	LSS	ES	OS	BPS	PAS	NAS	ACS	CCS	NCS	FUS	UED	UDD	UPD
BS	1													
LSS	-.23**	1												
ES	-.50**	.52**	1											
OS	-.02	-.24*	-.28**	1										
BPS	.58**	-.22*	-.36**	.20*	1									
PAS	-.25*	.66**	.62**	-.36**	-.32**	1								
NAS	.15	-.43**	-.28**	.33**	.33**	-.43**	1							
ACS	-.52**	.48**	.77**	-.26**	-.43**	.46**	-.26**	1						
CCS	.25*	-.22*	-0.14	0.01	.17	-0.10	.24*	-.17*	1					
NCS	-.23*	.33**	.56**	-0.10	0.02	.46**	-0.06	.52**	.05	1				
FUS	.57**	.09	.07	-.26**	.46**	.17	-.01	-.10	.10	.23**	1			
UED	.47**	.08	.10	-.16*	.39**	.20*	-.02	-0.11	.07	.23**	.86**	1		
UDD	.47**	.12	.12	-.27**	.39**	.18*	-.00	-0.01	.08	.27**	.95**	.70**	1	
UPD	.65**	.05	-.03	-.27**	.50**	.10	.01	-.18*	.14	.13	.94**	.71**	.85**	1

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

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

BS = Boredom Scale; LSS = Life Satisfaction Scale; ES = Engagement Scale; OS = Overload Scale; BPS = Boredom Proneness Scale; PAS = Positive Affect Scale; NAS = Negative Affect Scale; ACS = Affective Commitment Scale; CCS = Continuance Commitment Scale; NCS = Normative Commitment Scale; FUS = Full Underload Scale; UED = Underload Expectation Dimension; UDD = Underload Desires Dimension; UPD = Underload Perception Dimension

APPENDIX K

QUALITATIVE ANALYSIS OF OPEN ENDED BOREDOM QUESTION

### Qualitative Analysis of Open Ended Boredom Question

<b>Main Themes</b>	<b>Definition</b>	<b>Illustrative Statement</b>
Lack of Work – Slow paced	Participants reported boredom as a lack of work due to slow paced work causing gaps of time during the work day.	<p>“I got bored in the lull between completing two major advertising campaigns. The thrill and rush of the work was suddenly replaced with a more quiet period that stood out in contrast.”</p> <p>“I was bored waiting on someone else to finish their job. I had to wait for them so I could start mine.”</p>
Lack of Work- Finished with nothing to do	Participants reported boredom as a lack of work due to finishing work and then having nothing physically to do while at work.	<p>“Last week I finished what I needed to do and had 45 minutes left in my shift”</p> <p>“I was bored at work because I had completed all of my assignments and there were no other tasks to complete.”</p>
Unfulfilling Work	Participants reported boredom as work that was unfulfilling or they lacked interest in doing the work.	<p>“I was filling out a grant application. Mandatory forms, narrative sections, attachments, appendixes, and lengthy instructions written in mind-numbing bureaucracy-speak.</p> <p>“I am at work and bored right now. I am a non-tenure-track professor at an R1 institution. I just teach and I find that it is not challenging, not fulfilling, and I am burning out</p>
Repetitive Work	Participants reported boredom as work that was repetitive or monotonous.	<p>“Doing the same thing over and over takes a lot out of you. I was bored because there's not much to do besides the same task.”</p> <p>“I was bored because I'm a tax accountant. It's an inherently boring, repetitive job’</p> <p>“I have bored due to i was doing a repetitive work which requires less thinking.”</p>

Lack of Social Interaction	Participants reported boredom as having no one present or a lack of interaction with coworkers.	<p>“I was bored because most of members of my department staff went team building and was left alone.”</p> <p>“For once I had to work alone when my co-workers were absent, I felt very bored without them, usually I discuss with them while I'm working, I felt so bored that day.”</p>
Lack of Autonomy	Participants reported boredom as having no control over their work environment	<p>“When I had to attend a faculty meeting. I find all the administrative work in academia very, very tedious (note that I worked on that side of things for 15 years). It's just people talking to hear themselves speak about issues that I don't care about.”</p> <p>“Working in my industry comes along with fluctuating work hours. This sometimes means working overnight shifts with little warning. The worst part of this is waiting for the set to wrap, so that the end of day paperwork can be received by me.”</p>
Non-applicable	Participants either reported not being bored at work or gave answers that were not relevant to the question.	<p>“I can't think of a time. I enjoy my job.”</p> <p>“I have my regular work for some times i have thinking bored in work and some times loose work .”</p>

APPENDIX L  
INSTITUTIONAL REVIEW BOARD APPROVAL

Institutional Review Board Approval

**Human Subjects Review Board  
Department of Psychology  
California State University,  
San Bernardino**

**PI:** Ken Shultz & Jessica Clemons  
**From:** Donna Garcia  
**Project Title:** Perceptions of Boredom at Work  
**Project ID:** H-18SP-02  
**Date:** 4/8/18

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**Disposition: Administrative**

Your IRB proposal (Perceptions of Boredom at Work, Shultz & Clemons, H-18SP-02) is approved. You are permitted to collect information from 200 participants from MTurk. This approval is valid from 4-8-18 to 4-8-19.

**Good luck with your research!**



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Donna Garcia, Chair  
Psychology IRB Sub-Committee

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