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A MODEL OF WORKLOAD ASSIGNMENT PREFERENCE AND ITS EFFECT ON PERFORMANCE, PRODUCTIVITY, AND STRESS

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Abstract

The importance of employees within a firm has led to an increased need in maximizing performance and productivity, while also minimizing the stress levels of employees. This study provides insight into two types of workload assignment of (1) receiving a task all at once, and (2) receiving a task in incremental sections. It investigates how a subject's workload assignment preference can impact performance, productivity, and stress levels. In addition, it also looks at the predictor variables of the Big Five personality traits, locus of control, tolerance for ambiguity, uncertainty orientation, and need for cognition to determine if workload assignment preference can be accurately predicted. The results showed that there was an even split in workload assignment preference across the sample, and that employees who received a task based on their preferred type of workload assignment improved in performance and productivity, and had decreased stress levels. The study also showed that the predictor variables of openness, agreeableness, locus of control, uncertainty orientation, and need for cognition can accurately predict an employee's workload assignment preference when used together in a binomial regression model. Therefore, by using this model, managers can accurately predict an employees' workload assignment preference which can lead to increased performance and productivity, and decreased stress levels.

Keywords: workload assignment, employee management; performance; productivity; stress; Big Five; locus of control; tolerance for ambiguity; uncertainty orientation; need for cognition

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INTRODUCTION

Firms rely heavily on the workload given to employees at all levels of the organization to sustain a competitive advantage (Eiselt & Marianov, 2006). The importance of employees within a firm has led to an extensive set of research on how employee performance and productivity can be maximized, and stress levels minimized (Bartel, 1994; Bhatti & Qureshi, 2007; Eiselt & Marianov, 2006; McNeese-Smith, 1996; Michie, 2002). The key areas of study for employee productivity and performance include foci on leadership (McNeese-Smith, 1996), training programs (Bartel, 1994), and employee participation (Bhatti & Qureshi, 2007). The key areas for stress include individual differences, physical working conditions, and home life (Michie, 2002).

However, the literature on employee performance management has devoted little attention to the variable of employee workload. Studies specifically related to workload have included workload allocation and its effect on boredom and cost (Eiselt & Marianov, 2006), and work overload and its effect on stress (Michie, 2002). Therefore, there has been little attention devoted to the understudied variable of workload assignment and how it can impact the outcome variables of performance, productivity, and stress.

The reason this is so important to study is that in 2006, the American Institute of Stress found that, "US industries lose nearly "$300 billion a year-or $7,500 per worker-in employee absenteeism, diminished productivity, employee turnover and direct medical, legal and insurance fees related to workplace stress" (Stambor, 2006: 1). This shows the significant value employees have on firms and places a quantitative statistic with the cost of poor employee management in these key areas. Therefore, it is important for managers to be able to understand how to improve employee productivity and performance while also reducing stress.

This article expands upon this through the research of employee management by investigating two different types of workload assignment and employees' preferences of said workload assignment. This study contributes to the field of organizational behavior through the deeper exploration of this understudied variable of workload assignment preference; the relationship between this variable and the outcome variables of performance, productivity, and stress; and the relationship between workload assignment preference and the predictor variables of the Big Five personality traits, locus of control, tolerance for ambiguity, uncertainty orientation, and need for cognition.

Overall, this article studies three primary components. The first will determine the distribution of workload assignment preferences in the population and investigate the relationship between participants' actual workload assignment preference and stated workload assignment preference. The second component explores how workload assignment preference impacts performance, productivity, and stress in the completion of tasks. Finally, the third component then investigates the potential causes of workload assignment preference through the relationship between this variable and the Big Five personality traits, locus of control, tolerance for ambiguity, uncertainty orientation, and need for cognition.

In this study, 98 Midwestern college students participated in two survey studies. The first study included measures to determine individual differences in the participants. The second study then included additional measures on individual differences and two tasks relating to workload assignment preference.

In the following section, relevant background and definitions are reviewed and hypotheses are developed relating to each of the three major components of this study. Then the

research design and data are introduced, and the findings are reported and discussed. Finally, the implications, limitations, and opportunities for further research are detailed.

BACKGROUND AND HYPOTHESES

Workload Assignment Preference

As the main premise of this article, it is important to explicitly define exactly what is meant when workload assignment and workload assignment preference is used. Within these two constructs, *workload* is defined as "the sheer volume of work required of an employee" (Spector & Jex, 1998: 358). This includes the total number of tasks and the length of time it will take to complete them. Workload has been used as a variable in a wide range of studies which include the impact technology has on increasing workload (Chesley, 2010), the effect of workload on individuals' performance (Gonzalez, 2005), and its effect on employees' well-being (Fritz, Charlotte, Sonnentag, & Sabine, 2006). As shown in this subset of examples within the literature, workload is a commonly studied variable in which it is used as both a predictor and outcome variable in organizational settings. Therefore, workload can be used in a variety of ways within organizational management, but it always relates to the volume of work.

Within this article, *Workload assignment* is defined as the quantifiable total portion of a specific task that must be completed in a specific timeframe. For example, two types of workload assignment in this case are (1) an entire project to complete within one month or (2) one subproject to complete within a week for four weeks that together complete the entire project. An individual can choose the first type where they will receive (1) the entire task all at once, or they can choose the second task where they will (2) receive the entire task in incremental sections into segments. Either way it is the same total amount of work being completed. Within the literature, workload assignment has been related to workload allocation in that this involves the allocation

of various workload assignments to employees and individuals (Eiselt & Marianov, 2006; Hull, 2006). Workload assignment has also been used as a variable involving the management, training, hiring, and firing of employees which shows its wide-reaching effects within the workplace (Eiselt & Marianov, 2008). This shows that the allocation of workload assignments can impact any employee at any stage of his or her career. Because workload assignment can be changed within any average work setting by managers, it has been used to improve job satisfaction, avoid boredom, and minimize the costs to an organization (Eiselt & Marianov, 2006). Overall, this construct is an acceptable variable used in organizational management across a wide field of predictor and outcome variables related to workload assignment.

The construct of w*orkload assignment preference* is being introduced in this article and is defined as the greater liking for one type of workload assignment over another. This builds off of Eiselt & Marianov's workload assignment and the specific definition of the construct used within this article. This is because workload assignment preference is the preference of one of two types of workload assignments as defined previously. Within the literature, individuals' preferences vary across multiple variables including different preferences in leadership style (Hunt & Liebscher, 1973), assessment type preferences (Gijbels & Dochy, 2006), and work in environment (Westerman & Yamamura, 2007). As shown in these studies, individuals' preferences are rarely the same with a large enough sample because no human is the same as another. So, while a group of different individuals can have the same preference, there is generally at least one different individual who prefers the opposite. Therefore, based on these common differences in preference, it is likely that there will be differences in workload assignment preference.

Hypothesis 1: There will be a difference between the workload assignment preference of individuals.

Within workload assignment preference, the relationship between participants' stated workload assignment preference and their actual workload assignment preference is investigated. There are reasons to believe that one's stated preference will differ from their actual preference. This is because there are many studies done on conscious versus unconscious decision-making and how it affects various choices (Joordens & Merikle, 1993; Simonson, 2005). While there have been correlations between the two thought-processes, they do not always produce the same decision (2005). In addition, it has been shown that "individuals' stated preferences may not correspond closely to their actual preferences" (Wardman, 1988). This is primarily due to systematic bias but it shows there may be differences between stated and actual preferences (Bonsall, 1983). Within workload assignment preference itself, individuals' stated preferences may be biased based on a number of variables including their current motivation to complete tasks, trying to answer the question based on what others want to hear, and trying to conform with what they believe their peers might prefer. These, along with several other factors, could influence an individuals' stated workload assignment preference and make it not match their actual workload assignment preference.

Hypothesis 2: There will be differences between individuals' stated workload assignment preference and actual workload assignment preference.

Outcome Variables: Performance, Productivity, & Stress

Performance. Managers must be cognizant of subordinates' performance as this is one of the leading drivers of economic success for businesses and a fundamental management

responsibility (Allan, 2017). Specifically, individual performance is the core construct focused on within this article as this level of performance is vital to organizations to meet its goals (Sonnentag & Frese, 2001). Within this article, performance is defined in its outcome aspect so that performance is the measurable outcome of a specific task for each individual (2001).

Overall, performance can be measured by both objective and subjective methods on a range from poor to excellent performance (Allan, 2017). There is lots of literature covering how to measure employee performance including, but not limited to, error rate, output rate, absenteeism, and level of innovation (Allan, 2017; Campbell, 1999; Campbell, et al., 1993; Sonnentag & Frese, 2001). Because performance is defined and measured on the individual outcome level, it is important to note the individual differences perspective. This places the performance focus on individuals and the underlying factors that result in varying performance outcomes (Sonnentag & Frese, 2001). At this level, three determinants of performance are declarative knowledge, procedural knowledge and skills, and motivation (Campbell, McCloy, Oppler, & Sager, 1993). Declarative knowledge includes facts and goals an individual knows of and possesses. Procedural knowledge and skill include physical and self-management skills. Finally, motivation includes level of effort and persistence of said effort (Campbell, et al., 1993; Sonnentag & Frese, 2001).

An individuals' preference plays into many of these variables including motivation, self-management, and overall performance of tasks (Hunt & Liebscher, 1973; Campbell, et al., 1993). For example, if an employee prefers a certain type of leadership style or project, they may be more motivated to perform a specific workload assignment better if they receive one they wanted through their preferred leadership style. As this relates very closely with receiving a workload assignment based on one's workload assignment preference, it is reasonable to predict an

individual's performance will be higher if the workload assignment matches their workload assignment preference.

> *Hypothesis 3*: An individuals' performance will be higher when their workload assignment preference *matches* the workload assignment compared to when their workload assignment preference *does not match* the workload assignment.

Productivity. In relation to workplace performance, there has been a statistically significant correlation with productivity in that the more productive someone is, the higher the performance, and vice versa (Eerde, 2002; Human Resources Institute of New Zealand, 2015). While productivity is not the only indicator of individual or organizational performance, it is one of the seven primary factors influencing performance which shows its importance to the organization (Sink & Tuttle, 1989). Within this study productivity is measured at the individual level as this is the base level for all organizational productive endeavors (Harris, 1994). Individual productivity is defined as the ratio of outputs to inputs by each individual (Campbell, Campbell, & Associates, 1988; Harris, 1994). While individual productivity does not always have a one-to-one impact on organizational productivity, it is still a vital component of an organization's overall success (1994).

Individual productivity has been shown to be improved by matching individuals to jobs and tasks, using motivational techniques, and specific training (1994). One of the key productivity improvement techniques involves matching individuals to a task they are both proficient at and enjoy (Harris , 1994; Sink & Tuttle, 1989). This is the basis for matching employees based on their preferred tasks. Because of productivity's relation to performance, and the literature showing how task assignments matched with employee preferences can improve

productivity, it is reasonable to assume an individual's productivity will be higher if the workload assignment matches their workload assignment preference.

> *Hypothesis 4*: An individuals' productivity will be higher when their workload assignment preference *matches* the workload assignment compared to when their workload assignment preference *does not match* the workload assignment.

Stress. In addition to employees' performance and productivity, the stress levels of employees are a major area of concern amongst managers because of the harmful effects on employees' health, performance, productivity, and job satisfaction. (The American Institute of Stress, 2018; Wickens, 1979). With proper management, leaders can reduce stress on employees and help alleviate it through various means, but managers must be aware of the cause of stress in the first place (Murphy & Schoenborn, 1987; The American Institute of Stress, 2017; Wickens, 1979). Within this study, stress is a negative emotional and physiological response to tension (The American Institute of Stress, 2017). Relating to this, workplace stress specifically is defined as "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker" (Sauter, 1999: 2).

Workplace stress is the leading cause of stress among American adults (Murphy & Schoenborn, 1987; Wickens, 1979). While there are many variables that contributes to this, the four main contributors to stress in the workplace, in order from largest to smallest source, are workload, people issues, juggling work with personal lives, and lack of job security (Murphy & Schoenborn, 1987; Wickens, 1979). Workload alone, as defined earlier, is responsible for 46 percent of workplace stress which shows the importance of properly managing this (The American Institute of Stress, 2017; Wickens, 1979).

For example, there are strong correlations among workplace stress and job satisfaction, employee health, employee performance, and employee productivity (The American Institute of Stress, 2017). This includes how lower stress levels contribute to increased job satisfaction, health, performance, and productivity (2017). However, the opposite is also true in that higher stress levels can decrease job satisfaction, health, performance, and productivity (2017). Collectively, this shows the importance of properly managing stress.

As shown, workload is one of the leading causes of workplace stress. Based on the importance of workload and its impact on stress, it is reasonable to assume the assignment of said workload plays an important role in either increasing or decreasing employees' stress levels. If employees receive a workload assignment that matches their workload assignment preference, it is reasonable to assume their stress levels will be lower than their base stress levels.

Hypothesis 5: An individuals' stress levels will be lower when workload assignment matches with workload assignment preference than their baseline standard stress levels.

Predictor Variables: The Big Five Personality Traits, Locus of Control, Tolerance for Ambiguity, Uncertainty Orientation, and Need for Cognition

The Big Five Personality Traits. These traits account for individual differences split into five broad domains (John & Srivastava, 1999; Goldberg, 1992). The five domains are measured using a set of five different scales, and are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. The Big Five derives from the lexical hypothesis which states "that most of the socially relevant and salient personality characteristics have become encoded in the natural language" (John & Srivastava, 1999: 3). The initial studies on the Big Five have spawned multiple other studies which eventually led to an over 18,000-word list

which were eventually split into five different spectrums known today as the Big Five described below (John & Srivastava, 1999).

Each of these traits have been used as measures in job-related personality organizational psychology literature (Barrick and Mount, 1991). The Big Five personality traits have been shown to have relationships with job satisfaction, perceived workload, and productivity (Barrick & Mount, 1991; Rose, Murphy, Byard, & Nikzad, 2002). These relationships show the extensive research and support of the Big Five personality traits and how they are strongly connected to the job-related literature. Described below, each of the five traits are measured on a continuum from low to high in which individuals fall somewhere between the two opposing ends (Goldberg, 1992).

Openness to experience is the trait ranging from inventive and curious to consistent and cautious. This is the spectrum which shows to which degree an individual is curious, imaginative, artistic, interested, excitable, and unconventional (John & Srivastava, 1999). Individuals high in openness may be thought of as being imaginative, outgoing, curious and original (McCrae & Costa Jr., 1992). Based on the originality and imaginative aspects of how open an individual is, it is reasonable to assume those high in openness prefer to receive their workload assignments all at once because they would have more creative control in how they accomplish a task. In addition, it is reasonable to assume those who exhibit the consistent and cautious components, meaning they are low in openness, could prefer their workload assignment in incremental sections because this provides them with more constant and similar task assignments controlled by their leader which takes some responsibility and inconsistency away from the task (McCrae & Costa Jr, 1992).

Hypothesis 6: Individuals higher in openness will prefer their workload assignment all at once.

Conscientiousness is the trait of efficiency and organized to easy-going and careless. This is the spectrum which shows how much self-control one has and how determined and purposeful one is (Barrick & Mount, 1993). Individuals high in conscientiousness may be thought of as extremely organized, focused, and potentially stubborn (McCrae & Costa Jr, 1992). Because of how organized and stubborn individuals higher in conscientiousness tend to be, it is reasonable to assume that they are more likely to prefer their workload assignments all at once so that they have more control in the task. Likewise, those lower in conscientiousness are more easy-going and may not have the self-control for preferring tasks to be assigned all at once (McCrae & Costa Jr, 1992).

Hypothesis 7: Individuals higher in conscientiousness will prefer their workload assignment all at once.

Extraversion is the range of outgoing and energetic to solitary and reserved. This shows to which degree an individual is sociable, assertive, active, and talkative (Faria, Almeida, Martins, Gonçalves, Martins, & Branco, 2017). Individuals high in extraversion may be thought of as dominant in social settings and very sociable (McCrae & Costa Jr, 1992). It is reasonable to assume that individuals high in extraversion would prefer their workload assignments all at once because of their higher assertive and active characteristics defined by them being more extraverted (McCrae & Costa Jr, 1992). These individuals' take-charge and active personalities would contribute to a preference for wanting a task all at once so they could get started on the task opposed to sitting back and waiting to be active on the entire task (Barrick & Mount, 1993).

Hypothesis 8: Individuals higher in extraversion will prefer their workload assignment all at once.

Agreeableness is how friendly and compassionate to challenging and detached an individual is. This expresses how much an individual is altruistic, sympathetic to others and eager to help them, and in return believes that others will be equally helpful (Faria et al., 2017). Individuals high in agreeableness may be thought of as cooperative and great with teams (Faria et al., 2017). Because individuals who are more agreeable are more cooperative and take directions better than those lower in agreeableness, it is reasonable to assume that individuals high in agreeableness would be more likely to receive multiple sets of directions and thus prefer their workload assignments in incremental sections (Barrick & Mount, 1993). Inversely, those lower in agreeableness would most likely prefer tasks all at once because they are more independent and do not take directions as well. Thus, being assigned a task all at once limits the number of times instructions are given which would appease this quality in these individuals (Barrick & Mount, 1993).

Hypothesis 9: Individuals higher in agreeableness will prefer their workload assignment in incremental sections.

Neuroticism is the scale of sensitive and nervous to secure and confident. This is the spectrum which shows how tense, irritable, contended, shy, moody, and self-confident one is (John & Srivastava, 1999). Individuals high in neuroticism may be thought of as unstable and emotionally reactive (Barrick & Mount, 1993). Because of this, it is reasonable to assume they are less equipped to handle less structure in workload assignment, and therefore prefer their workload assignments in incremental sections for them. Those with a lower neuroticism score are more emotionally stable and shown to be better equipped to handle more ambiguous

situations such as receiving a task all at once (Barrick & Mount, 1993). Therefore, it is reasonable to assume those higher in neuroticism prefer their workload assignments in incremental sections.

Hypothesis 10: Individuals higher in neuroticism will prefer their workload assignment in incremental sections.

Locus of Control. This is "an individual's belief system regarding the causes of his or her experiences and the factors to which that person attributes success or failure" (Joelson, 2017: 1). The locus of control spectrum ranges from an internal locus to an external locus (Joelson, 2017). An individual with an internal locus "attributes success to his or her own efforts and abilities," whereas an individual with an external locus "attributes his or her success to luck or fate" (Joelson, 2017: 1).

This range shows to what degree individuals perceive how the efforts they make determines their success. For example, individuals with a more internal locus of control tend to begin their assignments before those with an external locus of control leading those with an internal locus of control to procrastinate less (Janssen & Carton, 2010). This is because individuals who have more confidence in their efforts and how it leads to success are more likely to take the initiative to start their work earlier (Janssen & Carton, 2010). This relates to how individuals with an internal locus of control prefer to take efforts into their own hands, so they have more control over the outcome (Joelson, 2017). Because individuals with an internal locus of control believe they have more control than those with an external locus of control, it is reasonable to assume those with an internal locus of control prefer their workload assignments all at once and thus have more personal control over the task.

Hypothesis 11: Individuals with a higher internal locus of control will prefer their workload assignment all at once.

Tolerance for Ambiguity. This is defined as "a range, from rejection to attraction, of reactions to stimuli perceived as unfamiliar, complex, dynamically uncertain, or subject to multiple conflicting interpretations" (McLain, 2009: 171). Those who are more on the rejection half of the spectrum tend to react more negatively to uncertain risks, whereas those who are more on the attraction half of the spectrum tend to react more positively to uncertain risks (McLain, 2009). Overall, this spectrum identifies how open or closed off an individual is when it comes to ambiguous situations.

A higher tolerance for ambiguity is being embraced more by organizations looking to seize opportunities and take risks to become more profitable (Katsaros, Tsirikas, & Nicolaidis, 2014). Individuals with a higher tolerance for ambiguity have contributed positively to this by being more productive and more responsive in the everchanging business environment (Katsaros et al., 2014). This is because they are more willing to take risks and complete more ambiguous tasks. This shows individuals with a higher tolerance for ambiguity are more willing to take risks and complete tasks without knowing the entire project or its outcome (Lauriola, Foschi, Mosca, & Weller, 2015; Nicolaidis & Katsaros, 2011). Therefore, it is reasonable to assume individuals with a higher tolerance for ambiguity prefer their workload assignments in incremental sections. This is because they are more accepting of ambiguous situations such as receiving an assignment in incremental sections as opposed to all at once similar to other ambiguous tasks assigned in the workplace.

Hypothesis 12: Individuals with a higher tolerance for ambiguity will prefer their workload assignment in incremental sections.

Uncertainty Orientation. This is "a self-regulatory style that focuses on how one approaches and handles uncertainty" (Sorrentino & Short, 1986: 321). Those who are uncertainty-oriented prefer to solve uncertain situations so they can obtain the necessary information to resolve the uncertainty. Those who are certainty-oriented prefer predictable and familiar situations and may rely on others to resolve the uncertainty (Smith & Bristor, 1994). This continuum allows for the placement of individuals on how comfortable one is when it comes to uncertain situations.

One who is uncertainty oriented is described as a "need to know" type of person, whereas one who is certainty oriented is described as an individual who circumvents uncertainty (Sorrentino, Nezlek, Yasunaga, Kouharar, Otsubo, & Shuper, 2008: 131). Those who are more uncertainty oriented have a higher desire to resolve uncertainty than to maintain certainty (Sorrentino, Ye, & Szeto, 2009). Because receiving a task all at once resolves the uncertainty in a project, it is reasonable to assume that individuals who are uncertainty-oriented prefer their workload assignments all at once. This is because they are more motivated than those who are certainty-oriented to obtain all necessary information (Sorrentino et al., 2009). When tasks are in incremental sections, this presents predictable and certain situations which would be more enticing to those who are certainty oriented.

Hypothesis 13: Individuals who are more uncertainty oriented will prefer their workload assignment all at once.

Need for Cognition. This is "a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experiential world" (Cohen, Stotland, & Wolfe, 1955: 291). Those who have a high need for cognition highly "engage in and enjoy thinking," whereas those who have a low need for cognition enjoy simpler tasks (Cacioppo

& Petty, 1982: 119). Therefore, this spectrum shows individuals' overall tendency to understand situations through the engagement and enjoyment of thinking.

Individuals with a high need for cognition have been shown to "benefit from having a complex and engaging… task" (Diehl & Wyrick, 2015: 7). Receiving a task all at once is reasonably more complex and requires more structuring than receiving tasks in incremental sections due to the larger number of instructions and additional amount of work assigned at once. Because individuals who have a higher need for cognition enjoy structuring and engaging in more complex tasks, it is reasonable to assume they prefer their workload assignments all at once because this provides them with more challenging and engaging tasks than if they were to be assigned a task in incremental sections.

Hypothesis 14: Individuals who have a higher need for cognition will prefer their workload assignment all at once.

Overall Predictor Variables. Looking at each of these variables individually helps to identify any significant variables that have an effect on workload assignment preference. However, looking at all the variables together helps to account for the variance explained by each and can produce a better model (Miles & Shevlin, 2001). Knowing each of these variables individually as described previously is important to understanding how they relate and how they can explain the variance in each other as described below.

The Big Five personality traits have been linked with locus of control on many studies including predicting hopelessness and compliance (Mutlu, Balbag, & Cemrek, 2010; Ucho, Terwase, & Ucho, 2015). However, none of the personality traits have been directly linked with locus of control in any of these studies showing these variables are used as reliable measures in

predicting various outcomes in individuals, but it is still important to include all constructs to increase the accuracy of the model (Mutlu et al., 2010; Ucho et al., 2015). In addition, the Big Five personality traits have been studied for their relation to tolerance for ambiguity (Jach & Smillie, 2019). This study showed tolerance for ambiguity related positively with openness, extraversion, and neuroticism (Jach & Smillie, 2019). This shows the strong connection tolerance for ambiguity has with these individual differences and supports the use of these measures together in a model (Jach & Smillie, 2019).

Related to this, the Big Five personality traits have also been studied in relation to uncertainty orientation. Only openness to experience was found to be directly related to uncertainty orientation which shows there is a connection between these two constructs (Hodson & Sorrentino, 1999). In addition, need for cognition has also been shown to be related to the Big Five personality traits (Sadowski & Cogburn, 1997). There are significant relationships between openness to experience and conscientiousness with need for cognition (Sadowski & Cogburn, 1997). This supports the connection of the Big Five personality traits with need for cognition for the combined use in this model.

In addition, ambiguity and uncertainty are closely related (Iannello, Mottini, Tirelli, Riva, & Antonietti, 2017). In the literature, ambiguous situations are defined as "dynamically uncertain" situations connecting ambiguity and uncertainty (McLain, 2009: 171). However, each construct still differs giving importance to having both in the model (McLain, 2009; Smith & Bristor, 1994). Individuals with a higher tolerance for ambiguity are more accepting of uncertain situations, but an individual could still be uncertainty or certainty oriented (Iannello et al., 2017). In relation, need for cognition has been linked with uncertainty and tolerance for ambiguity in a study on their association with stress (Iannello et al., 2017).

While these constructs differ in their impact, they all play a role on increasing and decreasing stress levels in individuals which gives importance to including all three constructs within this model as stress is one of the outcome variables (Iannello et al., 2017). In addition, locus of control and tolerance for ambiguity have been positively correlated together as an indicator for job satisfaction showing their relation within the job-related literature (Srivastava, Misra, & Singh, 2018). This shows these have been successfully used together in the past as a combined set of predictor variables.

These interconnected relationships show the validated combined use behind all these predictor variables in a single model. In addition, each individual construct has reasonable support to be a predictor for workload assignment preference. Based on this research of each variable and how they relate to each other, it is reasonable to assume that in an overall predictor model, these variables will be able predict an individual's workload assignment preference.

Hypothesis 15: A model including all the identified predictor variables will predict an individual's workload assignment preference.

METHODOLOGY

Study Participants

To test these hypotheses, 96 students from a Midwestern university in the College of Business Administration were recruited to participate in this study and were compensated with credit for a participation assignment in predesignated courses for their involvement. In total, 45 male and 50 female subjects participated in this study, and one participant identified as non-binary. Six additional individuals (5.88% of total sample) were eliminated from the final data set due to incomplete answers. The average age of the male subjects was 22.4 and ranged from 19 to

52 (*mdn* = 21, *sd* = 4.95). The average age of the female subjects was 23.0 and ranged from 19 to 39 (*mdn* = 21, *sd* = 4.86). Of the male subjects, 37 (77.08% of male participants) were employed at the time of the study, and of the female subjects, 34 (64.15%% of female participants) were employed. No significant gender difference was found on any of the previously described measures, so this factor will not be discussed further

Study Procedure

Prior to completing the study, the participants provided a demographic and completed a pre-survey consisting of the Tolerance for Ambiguity, Uncertainty Orientation, and Need for Cognition measures. Upon completion of this pre-survey, participants were then able to sign up for the study to be completed on a personal laptop or designated lab computer. Participants were provided with a consent form including a brief description of the study, an acknowledgement that participation fulfilled a course requirement, and contact information for the researchers and Institutional Review Board (IRB) for any questions they may have had. After consent was obtained, participants gave written consent for their participation and were then provided with instructions on for completing the study and were instructed to begin.

Participants were first asked about a scenario in which they were to be assigned a project. Subjects indicated which of two options assessed described the way they wanted to receive a work project: (1) all at once with an ultimate due date, or (2) in smaller increments with intermediate deadlines for each section. This was used to gauge their actual workload assignment preference. To see the questions as stated, see Appendix A. After answering this, the participants responded to survey questions to complete the locus of control, Big Five personality traits, and base stress measures. Participants were then randomly assigned to complete one of the following tasks: (A) typing out a series of five paragraphs provided in five uninterrupted minutes, (B)

typing out one paragraph every one minute a total of five consecutive times, (C) alphabetizing five sets of ten words in five minutes, or (D) alphabetizing one set of ten words every one minute a total of five consecutive times. The randomization of these tasks was evenly distributed so there was approximately the same number of participants completing each of the four different tasks first. Participants' performance and productivity levels were measured on these tasks. To see the paragraphs used in the typing task, see Appendix B. To see the list of words used in the alphabetizing task, see Appendix C.

After participants completed this first task, the same stress measure was used to gauge their stress levels after the first activity. Then participants completed a second task that was the opposite of the first task they did. For example, if they did task A first, they then completed task D, and vice versa. The same is true for tasks B and C so that after tasks one and two were completed, every participant would have completed both a typing and alphabetizing task, as well as a task provided (1) all at once and (2) in incremental sections. Having two different types of tasks and having each participant do a task both (1) all at once, and (2) in incremental sections, helped to control the variables being studied and provide more accurate results. Table 1 shows for each type of task option, the number of participants who completed it first.

After this, same as was done after the first task, the same stress measure was used to gauge participants' stress levels after the second activity. The study ended by asking participants about their task preference and stated workload assignment preference. Upon completion, participants were then thanked for their participation and granted credit for a participation assignment in predesignated courses.

Table 1

Number of Participants in Each Type of Task Option to Complete that Task First

	Workload Assignment Type	
Task	All at Once	In Incremental Sections
Typing	25	24
Alphabetizing	24	23

Measures

Big Five Personality Traits. The Big Five personality traits were measured using the five Mini-IPIP scales developed by Donnellan, Oswald, Baird, and Lucas (2006). It is a 20-item measure based on the 50-item measure of the Big-Five factor markers (a Lexical Big 5 Inventory) reported by Goldberg (1992). It should be noted that the Neuroticism scale was keyed in reverse order from the original scale developed by Goldberg as this was the keying done by Donnellan, et al. Subjects rated each question on a five-point scale including the options of: very accurate, moderately accurate, neither accurate nor inaccurate, moderately inaccurate, and very inaccurate. Within this study, Cronbach's alpha was calculated for each construct: openness to experience (.79), conscientiousness (.68), extraversion (.80), agreeableness (.77), and neuroticism (.62). Each measure except for neuroticism was at or above 0.65 showing a high level of internal consistency (Green, Lissitz, & Mulaik, 1977). While neuroticism's Cronbach's alpha is undesirable, it was used in further analysis as this is still an acceptable level of internal consistency and was used in further analysis as prior research shows this measure's validity (Donnellan, et al., 2006; Green, et al., 1977).

Locus of Control. The measure for locus of control was from Rotter's (1966) original study analyzing locus of control. There was an external and internal locus of control statement for 23 out of 26 pairings in the measure (there were 6 filler items). One point was awarded for

every internal statement selected. Total points were then placed on a range from 0 – 23, with 23 being high internal locus of control and 0 being high external locus of control. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.71 (Green, et al., 1977).

Tolerance for Ambiguity. McLain's (1991) MSTAT-I 22-item scale was used to measure tolerance for ambiguity. This new measure was validated and based on a revised construct definition which more comprehensively addresses characteristics of ambiguous stimuli and individuals' reactions to perceived ambiguity (McLain, 1991). The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.78 (Green, et al., 1977).

Uncertainty Orientation. Uncertainty orientation was operationalized using the 7-item measure developed by Smith and Bristor (1994) for use in applied research. This measure uses a five-point scale including: strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.91 (Green, et al., 1977).

Need for Cognition. The 18-item scale developed by Cacioppo, Petty, and Kao (1984) was used to measure need for cognition. This scale is a shortened version of the original 34-item scale as a quicker yet still validated measure of need for cognition (Cacioppo, et al., 1984). This had a high level of internal consistency, as determined by a Cronbach's alpha of 0.87 (Cacioppo, Petty, & Kao, 1984; Green, et al., 1977).

Stress. To measure stress, the PSS-4 developed by Cohen, Kamarck, and Mermelstein (1983) was used. This was a shortened version of the PSS-10 and has been validated for measuring differences in stress across points in time (Cohen, et al., 1983). When the scale was

used to determine base stress levels it had a Cronbach's alpha of 0.79, when used to measure stress after task one it had a Cronbach's alpha of 0.75, and when used to measure stress after task two it had a Cronbach's alpha of 0.69. These results show the scale had a high level of internal consistency as it had a Cronbach's alpha above 0.65 all three times it was used in this study (Green, et al., 1977).

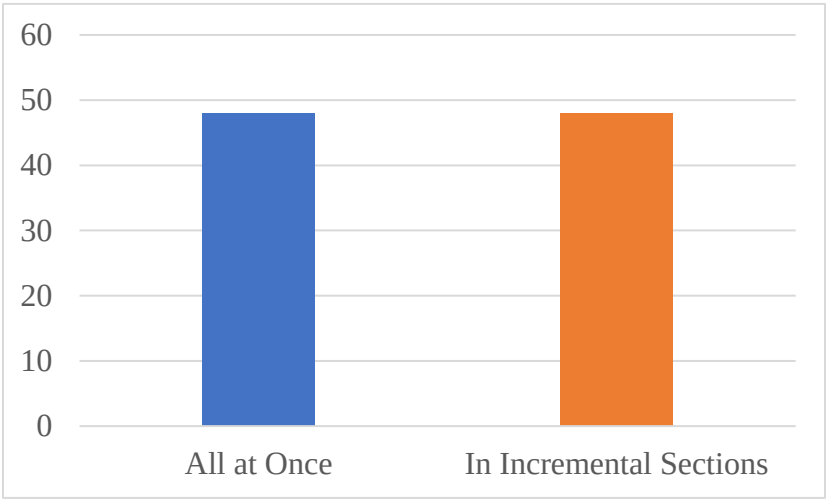
RESULTS AND ANALYSIS

Workload Assignment Preference

The first question of the survey asked participants to either receive a complex task (1) all at once or (2) in incremental sections. This measured their actual workload assignment preference. Participants' selections were totaled to determine the split in the population's workload assignment preference which resulted in 48 individuals preferring tasks assigned (1) all at once, and 48 individuals preferring tasks assigned (2) in incremental sections. Figure 1 shows the split in the populations' preferences. This supports hypothesis 1, as there is a difference in participants' preferences of workload assignment.

Figure 1

Population Split in Actual Workload Assignment Preference



To test the second hypothesis, McNemar's test was used to determine if there was a difference of workload assignment preference between the two related groups of actual preference and stated preference. This data set matched the three main assumptions of McNemar's test because this data consisted of (1) one dichotomous dependent variable of workload assignment preference with two mutually exclusive groups of (a) all at once and (b) in incremental sections, (2) one independent variable with two related groups of (a) actual preference and (b) stated preference, and (3) the participants were from a random sample (McNemar, 1947).

At the end of the study a question explicitly asked participants about their stated workload assignment preference. A McNemar's test with continuity correction was used to compare these results of stated preference with the results of actual preference from the beginning of the study (Edwards, 1948; McNemar, 1947). This test showed the number of participants whose *actual* preference was (1) all at once decreased to 41 participants (42.71%) when compared to participants' *stated* preference. There was a concomitant increase to 55 participants (57.29%) from participants' *actual* preference to *stated* preference in the number of those whose preference was (2) in incremental sections.

This change was a consequence of 15 participants whose *actual* workload assignment preference was (1) all at once but *stated* their workload assignment preference as being (2) in incremental sections. However, 22 participants whose *actual* workload assignment preference was (2) in incremental sections *stated* their workload assignment preference as being (1) all at once. This is not a statistically significant difference, $\chi^2(1) = .97$, $p = .324$. Therefore, hypothesis

2 is rejected, but it should still be noted that there were some differences in participants' actual and stated workload assignment preference.

Outcome Variables: Performance, Productivity, and Stress

Once it was determined that there was no statistically significant difference in participants' stated and actual workload assignment preferences, three tests were run to determine if matching a participant's workload assignment preference with the actual workload assignment can have an impact on performance, productivity, and stress levels of participants.

Performance. To test the third hypothesis, the Wilcoxon signed-rank test was used to determine if there was a median difference between the paired observations of participants' performance when they received a task based on (1) their actual preference, and (2) the opposite of their actual preference. This data set met the two preliminary assumptions of the Wilcoxon signed-rank test because this data consisted of (1) one dependent variable of performance measured at the continuous level, and (2) one independent variable with two related groups of (a) the workload assignment *matches* participant's workload assignment preference, and (b) the workload assignment *does not match* participant's workload assignment preference.

Performance was measured based on the typing and alphabetizing tasks described earlier in the methodology section of this article. On the typing tasks, performance was measured based on the error rate calculated by the total number of errors, including misspelled words, missing words, incorrect punctuation, missing punctuation, and incorrect capitalization. On the alphabetizing tasks, performance was based on the error rate calculated by the total number of words incorrectly alphabetized. For the results of these two activities to be compared with each other, the results of each had to be placed on the same scale. To accomplish this, results were

ranked for each activity from 1 to 96. Then the participants' rankings were split up into two categories: (1) ranking when task assignment *matched* with subjects' workload assignment preference, and (2) ranking when task assignment *did not match* with subjects' workload assignment preference. The subjects' performance when actual task assignment matched workload assignment preference is outlined in Table 2 below.

Table 2

Performance When Workload Assignment Matched Workload Assignment Preference

Type of Change	Percentage Change
Improved Performance	65.63%
No Change in Performance	1.04%
Worsened Performance	33.33%

Of the 96 subjects, there was a statistically significant median increase in performance (higher ranking of 11.5 placements) when workload assignment *matched* subjects' workload assignment preference (ranking of 40) compared to when workload assignment *did not match* subjects' workload assignment preference (ranking of 51.5), $z = 3.29$, $p = .001$. Therefore, with an alpha value of .05, there was a statistically significant improvement and thus hypothesis 3 can be accepted.

Productivity. To test the fourth hypothesis, the Wilcoxon signed-rank test was again used as this data set also met the two preliminary assumptions. Productivity was also measured based on the typing and alphabetizing tasks described earlier in the methodology section of this article. On the typing tasks, productivity was measured based on the total number of characters left once time ran out on the task. On the alphabetizing tasks, productivity was calculated by the total number of words not yet alphabetized once time ran out on the task. For the results of these two activities to be compared with each other, the results of each had to be placed on the same

scale. To accomplish this, results were ranked the same way it was done to measure performance. The resulting two categories were used in the Wilcoxon signed-rank test, and the results of subjects' productivity when actual task assignment matched workload assignment preference is outlined in Table 3 below.

Table 3

Productivity When Workload Assignment Matched Workload Assignment Preference

Type of Change	Percentage Change
Improved Productivity	56.25%
No Change in Productivity	10.42%
Worsened Productivity	33.33%

Of the 96 participants, there was a statistically significant median increase in productivity (higher ranking of 7 placements) when workload assignment *matched* subjects' workload assignment preference (ranking of 21.5) when workload assignment *did not match* subjects' workload assignment preference (ranking of 28.5), $z = 2.01$, $p = .044$. Therefore, with an alpha value of .05, there was a statistically significant improvement and thus hypothesis 4 can be accepted.

Stress. To test the fifth hypothesis, the Wilcoxon signed-rank test was once again used as the data set also met the two preliminary assumptions.

Stress was measured three times during the experiment. First, every participant's stress was measured before the first task to provide each subject's baseline standard. Stress was next measured following the completion of every subject's first task, and a final time after the completion of every subject's second task. Because of the evenly distributed randomization of each of the four different task options as described in the methodology section, 49% of the participants received a workload assignment that matched their workload assignment preference

as part of the first task, and 51% received a workload assignment that matched their workload assignment preference as part of the second task. This allowed the factor of timing to be controlled for so that when participants completed the task that was assigned to match their workload assignment preference, this timing did not affect the data.

Combining the results from the second and third measurements, two data sets were created for (1) stress levels when workload assignment *matched* subjects' workload assignment preference, and (2) stress levels when workload assignment *did not match* subjects' workload assignment preference. To test the hypothesis, stress levels when (1) workload assignment *matched* subjects' workload assignment preference, and (2) subjects' baseline standard stress levels were compared. The results of subjects' stress levels when actual task assignment matched workload assignment preference is outlined in Table 4 below.

Table 4

Stress Levels When Workload Assignment Matched Workload Assignment Preference

Type of Change	Percentage Change
Decreased Stress	47.92%
No Change in Stress	25.00%
Increased Stress	27.08%

Of the 96 participants, base stress levels (*mdn* = 14, *sd* = 4.10) compared to when the task assignment *matched* subjects' workload assignment preference (*mdn* = 14, *sd* = 3.79) were overall the same, $z = -2.21$, $p = .027$. However, with an alpha value of .05, there was still a statistically significant decrease and thus hypothesis 5 can be accepted.

Predictor Variables: The Big Five Personality Traits, Locus of Control, Tolerance for Ambiguity, Uncertainty Orientation, and Need for Cognition

The final stage of analysis conducted tests on the designated predictor variables for workload assignment preference. To start, Pearson's correlation was run to assess the relationship between the predictor variables of the Big Five personality traits, locus of control, tolerance for ambiguity, uncertainty orientation, and need for cognition. Table 5 shows the results from this test including the mean, standard deviation, and a full correlation matrix of the stated predictor variables.

Table 5

Correlations Between Workload Assignment Preference and Predictor Variables

	Mean	SD	1	2	3	4	5	6	7	8
1. Openness to Experience	14.90	3.08	-							
2. Conscientiousness	14.18	2.99	.012	-						
3. Extraversion	13.25	3.58	.37**	-.05	-					
4. Agreeableness	15.78	2.88	.33**	.21*	.27**	-				
5. Neuroticism	11.10	3.01	-.22*	-.10	-.16	.08	-			
6. Locus of Control	11.60	3.60	.28**	.30**	.18	.07	-.27**	-		
7. Tolerance for Ambiguity	2.74	0.49	-.42**	.19	-.25*	.03	.28**	-.24*	-	
8. Uncertainty Orientation	62.04	5.11	-.39**	.03	-.25*	-.18	.15	.15	.37**	-
9. Need for Cognition	3.34	0.58	.40**	-.03	-.25*	.08	-.19	-.19	-.74**	-.34**

Note: N = 96 (based on the total number of participants)

**Correlation is significant at the 0.01 level.

*Correlation is significant at the 0.05 level.

As shown in table 5, tolerance for ambiguity has a very high correlation with need for cognition (r = -.74) and moderate correlation with openness to experience (r = -.42). Because of this multicollinearity caused by tolerance for ambiguity, this predictor variable will not be used and thus hypothesis 12 can be rejected as this cannot be used to predict workload assignment preference. The remaining eight predictor variables were then used in an initial binomial logistic

regression model. A breakdown of the mean score of each predictor variable based on workload assignment preference is shown in Table 6. This displays the individual differences in scores that contribute to the binomial logistic regression model.

Table 6

Differences in Means of Predictor Variables based on Workload Assignment Preference Type

	Mean	SD	Max	Min
Openness				
All at Once	15.71	2.59	20	7
In Incremental Sections	14.08	3.34	19	7
Conscientiousness				
All at Once	13.71	3.22	20	8
In Incremental Sections	14.65	2.71	20	10
Extraversion				
All at Once	13.71	3.35	19	5
In Incremental Sections	12.79	3.78	19	5
Agreeableness				
All at Once	15.54	2.97	20	8
In Incremental Sections	16.02	2.79	20	5
Neuroticism				
All at Once	10.96	2.90	16	5
In Incremental Sections	11.25	3.15	17	6
Locus of Control				
All at Once	11.54	3.79	19	4
In Incremental Sections	11.67	3.45	20	3
Uncertainty Orientation				
All at Once	60.83	4.79	79.86	8
In Incremental Sections	63.26	5.18	79.86	10
Need for Cognition				
All at Once	3.50	0.60	4.83	5
In Incremental Sections	3.19	0.52	4.61	5

A binomial logistic regression was performed to ascertain the effects of the Big Five personality traits, locus of control, uncertainty orientation, and need for cognition on participants' workload assignment preference. Prior to running the binomial logistic regression, the linearity of the continuous variables with respect to the logit of the dependent variable was

assessed via the Box-Tidwell procedure as this is required for a binomial logistic regression to be valid (Box & Tidwell, 1962). As recommended by Tabachnick and Fidell, a Bonferroni correction was applied using all eight terms in the model as this helps to correct for multiple comparisons when looking at regression (Tabachnick & Fidell, 2014). This resulted in statistical significance being accepted when $p < 0.006$. (Tabachnick & Fidell, 2014). The results showed all continuous independent variables were found to be linearly related to the logit of workload assignment preference. Overall, there was one standardized residual with a value of 2.95 standard deviations, which was kept in the analysis.

This initial logistic regression model was statistically significant, $\chi^2(8) = 11.82$, $p = .008$, and it correctly classified 60.4% of participants' workload assignment preference. However, at an alpha value of 0.05, only two variables were statistically significant within this model. These were openness (p = .022) and agreeableness (p = .035). Conscientiousness (p = .463), extraversion (p = .585), and neuroticism (p = .642) had very high p-values compared to the remaining five variables and did not significantly contribute to the model. Therefore, a binomial logistic regression was run again excluding these three variables to test if the significance and accuracy of the model would improve.

This final binomial logistic regression model was statistically significant, $\chi^2(5) = 19.49$, $p = .002$, and it correctly classified 68.8% of participants' workload assignment preference. Sensitivity was 72.9% meaning that of the participants who had a workload assignment preference of (1) all at once, 72.9% were accurately predicted by the model. Specificity was 64.6% meaning that of the participants who had a workload assignment preference of (2) in incremental sections, 64.6% were accurately predicted by the model. The results of the model are shown in table 7.

Table 7

Logistic Regression Predicting Workload Assignment Preference based on Predictor Variables

	B	S.E.	Wald	*df*	*p*	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
Openness	.24	.10	5.55	1	.018	1.27	1.04	1.56
Agreeableness	-.22	.10	4.91	1	.027	.80	.66	.98
Locus of Control	-.13	.08	3.11	1	.078	.88	.76	1.02
Uncertainty Orientation	-.09	.05	3.14	1	.077	.91	.82	1.01
Need for Cognition	.76	.47	2.67	1	.102	2.15	.86	5.35
Constant	4.48	4.29	1.09	1	.296	88.20		

Of the five predictor variables, openness (p = .018) and agreeableness (p = .027) were the only statistically significant variables at an alpha value of 0.05. However, each of the remaining three variables significantly contributed to the model and removing them resulted in lower accuracy and significance of the model so each of these were left in. This analysis leads to the final accepted and statistically significant binomial logistic regression model for predicting workload assignment preference based on the predictor variables of openness, agreeableness, locus of control, uncertainty orientation, and need for cognition. This allows hypotheses 6, 9, 11, 13, and 14 to be accepted as these variables *can* be used to predict workload assignment preference. However, hypotheses 7, 8, and 10 are rejected as these variables *can not* be used to predict workload assignment preference.

DISCUSSION

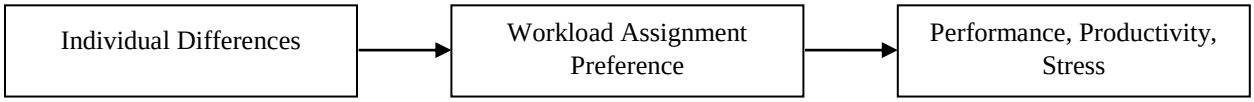
Importance and Managerial Implications

This work investigated workload assignment preference, independent variables that predict it, and overall effect on performance, productivity, and stress levels. Results show that individual differences including openness, agreeableness, locus of control, uncertainty

orientation, and need for cognition can be used to predict an individuals' workload assignment preference. Results showed that half the population's workload assignment preference was to receive a task (1) all at once, and the other half of the populations' workload assignment preference was to receive a task (2) in incremental sections. Finally, when individuals were assigned a task based in a way that aligns with their preference, the results show that performance and productivity increase, and stress levels decrease. Figure 2 displays the general model developed from this study showing the three key factors just described.

Figure 2

Model of Workload Assignment Preference



Workload Assignment Preference. The key finding from the central part of the model is the population is evenly split in its preference for workload assignment. This shows that in the general population, approximately half has a workload assignment preference of receiving a task (1) all at once, and the other half, (2) in incremental sections. The importance of this specific data is that tasks cannot simply be assigned the same to everyone. For example, if a project were assigned to every employee all at once, then approximately only half of them would attain higher productivity, with higher levels of performance, and with less stress. This also shows that correctly guessing which type of workload assignment employees prefer would be about as accurate as flipping a coin. Therefore, because of the approximately 50% split in population amongst workload assignment preference, managers who determine which preference employees have are likely to better leverage their skills.

Similar results are reported in Eiselt and Marianov's (2006) study on employee positioning and workload allocation. They found that staff assignment and workload allocation can increase employees' job satisfaction (Eiselt & Marianov, 2006). These results add to our understanding by contributing another dimension to workload allocation through the dependent variable of workload assignment preference and the predictor variables of openness, agreeableness, locus of control, uncertainty orientation, and need for cognition. The findings from this study builds on current literature to improve managers' abilities to better align assignment with preferences and improve the work completed by employees.

In addition to this, this research also found no statistically significant difference between stated workload assignment preference and their actual (measured) preference. However, differences were found so measuring actual preference will provide more accurate results than employees merely stating their preference. Understanding and utilizing the predictors of actual preference will yield more accurate employee workload assignment preference.

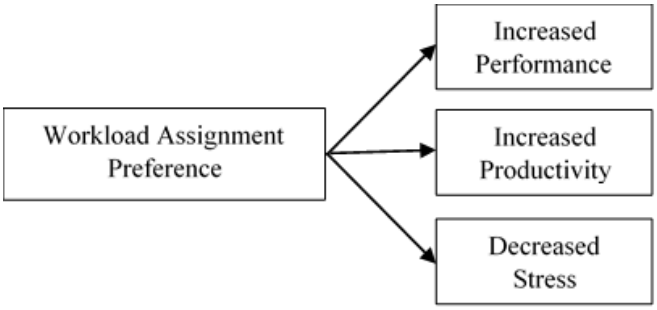
Outcome Variables: Performance, Productivity, and Stress. The results from this study show that when subjects' workload is assigned in alignment with their workload assignment preference, their performance and productivity are both likely to improve. Because one key facet of every managers' job is to maximize the performance and productivity of subordinates, this is a very important finding. This shows that if a manager correctly identifies an employees' workload assignment preference and assigns tasks and projects in alignment with this preference, the quality and quantity of work as determined by performance and productivity will improve (McNeese-Smith, 1996).

Stress levels can be reduced in the same way. Stress levels have been shown to be an important metric to assess because it can negatively impact a worker's job satisfaction and

performance (Michie, 2002). Adding to the value of the findings are results that show aligning actual workload assignment with subjects' workload assignment preference also decreased subjects' stress levels, which has previously been shown to improve job satisfaction and overall health (Stambor, 2006). The combination of results on performance, productivity, and stress are shown in figure 3. Overall, knowing the implications workload assignment preference has on these outcome variables, it becomes even more important to be able to accurately predict employees' workload assignment preference.

Figure 3

The Effects of Matching Workload Assignment With Workload Assignment Preference

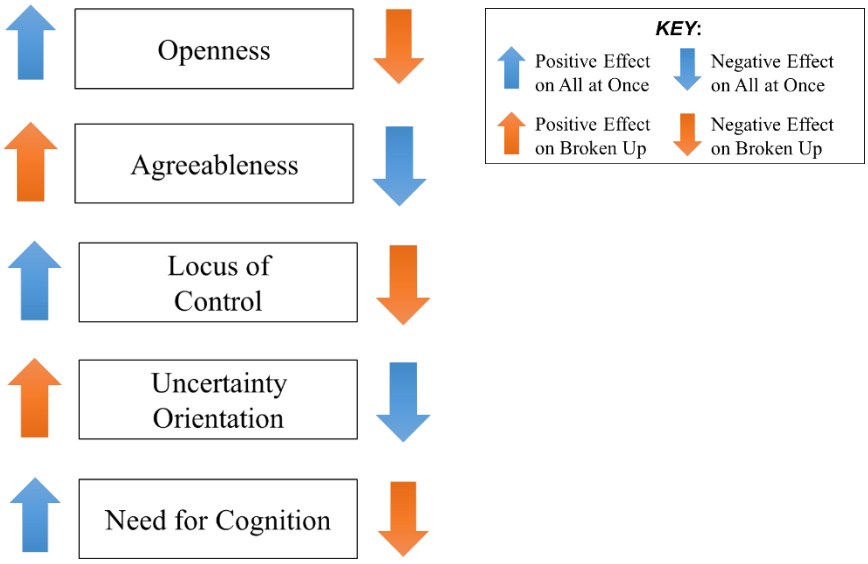


Predictor Variables: The Big Five Personality Traits, Locus of Control, Tolerance for Ambiguity, Uncertainty Orientation, and Need for Cognition. Analysis found that individuals who are higher on the openness scale, lower on the agreeableness scale, are on the internal half of the locus of control scale, are lower on the uncertainty orientation scale, and are higher on the need for cognition scale were more likely to prefer tasks assigned (1) all at once. Vice versa, individuals who are lower on the openness scale, higher on the agreeableness scale, are on the external half of the locus of control scale, are higher on the uncertainty orientation scale, and are lower on the need for cognition scale were more likely to prefer tasks assigned (2) in incremental sections. These results are visually shown in figure 4. The remaining variables of

conscientiousness, extraversion, neuroticism, and tolerance for ambiguity were not found to be predictors of workload assignment preference.

Figure 4

Predictor Variables' Influence on Workload Assignment Preference



The results of the predictor variables were expected as explained in the background and hypotheses section of this article. Those who prefer tasks to be assigned all at once tend to want more creative control, are less submissive, believe they have more control in events, are more motivated to obtain all necessary information, and enjoy thinking. This matches the findings of other studies containing these variables as these individual differences have played the part in determining a number of other factors including job type, job satisfaction, and promotions (Cacioppo & Petty, 1982; John & Srivastava, 1999; Sorrentino & Short, 1986).

Combining all of this together shows the significance of these findings. If managers use this model, they will have the data they need to accurately know most employees' workload assignment preferences. However, if this is deemed to be unfeasible by managers to accomplish,

the data supports that simply asking an employee about their preference could suffice. Either way, managers now have an additional way to improve employees' performance and productivity, and decrease their stress levels. This is a significant finding because this adds to the field of organizational behavior by providing an additional tool managers can use to being effective leaders.

Limitations and Future Research

Some of the individual difference measures used were shortened versions of their original measures. This is important to note because taking out items in a valid measure could result in inaccuracies (Cohen, Kamarck, & Mermelstein, 1983). However, every measure was carefully chosen and proven to be valid and reliable as detailed in the methodology section of this article. The reason the shortened versions were chosen was because this helped to shorten the overall study. If the study were to become too long, this could result in participants becoming bored and not answering each question so as to accurately reflect their opinions. Therefore, despite the risk of potential inaccuracies by using abbreviated measures, this decision helped to increase the validity of the study overall.

In addition, the stress measure is a self-reported measure of physiological responses which means that it is not as accurate as collecting the physiological data itself. While it is the most accurate way to measure stress in a survey format, it cannot detect exact stress levels. For the purpose of this study, the initial survey format testing for stress levels is sufficient, but a potential area for further research would be to test this by gauging actual physiological responses connected to stress including perspiration levels and heart rate (Marques, Silverman, & Sternberg, 2010).

Another limitation of the study is that only college students were used. This can skew the data to those of a higher intellectual level and younger age than the general population. This is important to note because there could be some differences when applying the findings and model of this study to the general population. However, it was shown that most students are currently employed, and most students do join the workforce upon graduation. Because this study is looking at how leaders can better manage employees, the study population used should be sufficient in generalizing to the overall workforce because of the similarities and connections between the sample and workforce population.

In addition, neuroticism's Cronbach's alpha was 0.62 which is an undesirable level. However, this is still an acceptable level, it is just not preferred (Green, Lissitz, & Mulaik, 1977). The questions within this measure have also been validated so it would be reasonable to continue using it (Donnellan, Oswald, Baird, and Lucas, 2006). However, in the end neuroticism was not included in the final model so the Cronbach's alpha of this construct does not play an important factor in the resulting model developed in this study.

Finally, it should also be noted that only 96 usable participants contributed to the data set as explained in the methodology section. This number was more than sufficient in running all of the statistical tests and making assumptions about the larger population. However, increasing the number of participants could add to the validity and reliability of the results. While the 96 participants is sufficient for this study, additional participants should be considered when doing additional research related to this specific field. Additional areas for further research are outlined in Table 8.

Table 8

Additional Areas for Further Research

Research Area	Areas for Investigation
Individual Differences as Predictors to Workload Assignment Preference	• Studies that examine goal orientation's effect on workload assignment preference • Examination of related theories on individual differences • Studying the effect of the "Dark Triad" (three personality traits of narcissism, psychopathy, and Machiavellianism) on workload assignment preference • Studies consisting of more than 100 participants encompassing those at various levels along their career paths
Workload Assignment Preference	• Measuring the differences in workload assignment preference of leaders versus subordinates • Developing a scale of workload assignment preference to fill in the gaps between the two identified ends of the spectrum
Outcome Variables from Workload Assignment Preference	• Measuring actual physiological responses to tasks based on workload assignment preference for more accurate results on stress levels • Studying the effect of workload assignment preference on job satisfaction • Studies that examine how workload assignment preference impacts employee motivation

CONCLUSION

The individual differences explained in this study help to predict an employee's workload assignment preference. The result of employees receiving a task based on this was shown to improve performance and productivity while decreasing stress levels. This is an important finding because this provides managers an additional way of better utilizing their most significant resource in their employees. Managers can now more effectively assign tasks which productively adds to the field of organizational behavior. The gap in this field of the understudied variable of workload assignment preference has begun to be addressed with this article, and it has also opened up a wide range of areas for future research including investigating additional predictor variables, expanding upon the workload assignment preference scale, and finding new ways workload assignment preference can impact the field. Workload assignment preference offers a new subset to employee management and is a realistic variable for real-world applications.

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APPENDIX A

Survey Question Used to Determine Actual Workload Assignment Preference

Imagine you are a marketing intern trained in marketing research at a local marketing research firm. You have been asked to complete marketing research for Company XYZ on brand awareness amongst millennials in the local area. Select your preference of how you would like to be assigned this project.

1. At the beginning of the week, you will receive all the information, instructions, resources, and financial support you will need for the project, including info about how to ask questions when need be. You will present your findings when the projects is done. You should spend only what is necessary from the budget, but you can use any extra time any way you want to.
2. At the beginning of the week – and of every week, you will receive all the information, instructions, resources, and financial support you will need for that week's project assignment, including info about how to ask questions when need be. You will present your findings when the projects is done. You should spend only what is necessary from the budget, but you can use any extra time any way you want to.

APPENDIX B

Five Paragraphs Used in Typing Task

1. Consumer Value Stores (CVS) Health is a pharmaceutical company focused on "helping people on their path to better health." It began this path in Lowell, Massachusetts by Stanley and Sidney Goldstein and Ralph Hoagland just over 50 years ago in 1963. In just one year, CVS was able to grow to 17 stores across the eastern border. This exhibits the

rapid and cutting-edge authority CVS held in supply chain management, enabling it to grow so rapidly. With this rapid expansion, CVS also had to develop a marketing platform which would maintain uniformity amongst all their stores. Due to this, they developed their first logo in 1964.

2. These first stores had a deep product line of health products, but it grew even deeper with the addition of actual pharmacies in a few of their stores beginning in 1967. After these first few years of innovation in the pharmaceutical and health sales field, CVS was sold to Melville Corporation in 1969. Melville operated a vast array of stores across the country including toys, footwear, and with the acquisition of CVS, health products. The sale of CVS to Melville only boosted the financial success of CVS as it now had even more capital to use for opening more stores. By 1970, there were over 100 stores across the Northeast and New England. Two years later it had already doubled in size again with the 84 stores acquired from Clinton Drug and Discount Stores.
3. With the great leadership and constant innovation of CVS, it reached $1 billion in annual revenue by the year 1985. The same year also saw the addition of prescription benefit management services. This came about because of CVS's expertise in health care cost management. This proved vital for the company in coming years as they accelerated past the competition to become challenging direct competitors with Walgreens. By the year 1988, 750 stores were in operation, bringing in about $1.6 billion in annual revenue.
4. Over the next couple decades, CVS acquired more than 3,000 new stores across the nation and began entering new marketplaces such as Florida and Michigan. In 1999, CVS continued its innovation with the launch of CVS.com. This marked the first fully integrated online pharmacy in the United States. By entering the online era ahead of its

time, CVS attained a substantial market share because it was the only one available. In 2001, CVS launched a loyalty card program, the first national pharmacy to do so. This emphasized the importance of the marketing concept and employee retention. It also emphasized that people are vital to the organization, and this carried over into employee retention and management as well.

5. In 2006, MinuteClinic, the leading in-store health clinic, was acquired by CVS. In 2007, CVS merged with Caremark Rx to create CVS Caremark. By this time, CVS was now the nation's leading pharmacy service provider. Three years later, CVS Caremark officially changed its name to CVS Health, a branding effort to emphasize the importance of its customers' health. CVS now does over $153 billion in revenue each year in its over 9,600 stores; continuing to innovate, generate revenue, and set high standards for corporate leadership in pharmaceuticals.

APPENDIX C

Five Sets of Words Used in Alphabetizing Task

Set 1	Set 2	Set 3	Set 4	Set 5
Scrutinize	College of Business	Artwork	Print	Vacation
Book	Marketing	Paintings	Newspapers	Summer Break
Pages	Accounting	Artist	Articles	Beach
Reading	Sustainability	Crayons	Propaganda	Mountains
Summer Program	Didaskaleinophobia	Color	Marketing Material	Adventurer
Magazines	Enlightenment	Imagination	Reporter	Sabbatical
Tear	Education	Emotional Power	Media	Travel
Librarian	Educational Program	Show	Public Relations	Peripatetic
Bookshelf	Financial Literacy	Acrylics	Press Release	Explore
Mahogany Wood	Entrepreneurship	Showmanship	Communications	Fun and Games