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Dealing With the Effects of COVID-19 Job Demands on Public Sector Employees' Work Engagement and Job Burnout: The Role of Public Service Motivation, Servant Leadership, and Mission Valence

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ABSTRACT

DEALING WITH THE EFFECTS OF COVID-19 JOB DEMANDS ON PUBLIC SECTOR EMPLOYEES' WORK ENGAGEMENT AND JOB BURNOUT: THE ROLE OF PUBLIC SERVICE MOTIVATION, SERVANT LEADERSHIP, AND MISSION VALENCE

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The global recession stemming from the COVID-19 pandemic had a significant impact on the public sector of the U.S. economy. Specifically, reduced tax revenues from a dramatic decline in economic activity and increased demand for public services resulted in new and increased job demands for public sector employees (Eggers et al., 2020). However, limited research has examined the effects of COVID-19-related demands on job burnout and work engagement among public sector employees, and the role of personal, social, and organizational resources to protect their well-being (Demerouti & Bakker, 2023). The current study addressed this gap by employing the Job Demands – Resources (JD-R) model as a theoretical framework to better understand how public sector employees are affected by COVID-19 hindrance job demands and the role of public service motivation, servant leadership, and mission valence as resources uniquely suited to them. In line with the JD-R model, it was predicted that COVID-19 hindrance job demands would negatively affect employee well-being while resources would have a positive effect. The moderating role of resources were also examined, and it was predicted that resources would weaken or "buffer" the negative effects of demands and interact to strengthen or "reinforce" the positive effect of other resources. A total of 106 public sector employees responded to two surveys approximately 30-day apart from April to July of 2020, during the

COVID-19 pandemic. Support for the proposed hypotheses was mixed. COVID-19 hindrance job demands were found to predict job burnout measured 30 days later, whereas the organizational resource mission valence predicted work engagement 30 days later. Job burnout was also significantly related to work engagement, as were COVID-19 hindrance job demands indirectly through their effect on job burnout. Finally, a significant interaction was found between the resources of servant leadership and mission valence when predicting work engagement 30 days later. Results from the current study provide some support for the JD-R model as a theoretical framework to explain employee outcomes in the public sector during a time of crisis. Practical implications for protecting and enhancing the psychological well-being of public sector employees are also provided.

To my daughter, Ember Ray Dillulio, who made me a dad, the most meaningful title I'll ever hold. May this dissertation exemplify the importance of finishing what you start and inspire you to aim high.

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CHAPTER I

INTRODUCTION

In January 2020, the World Health Organization declared COVID-19 a global public health emergency, leading to the U.S. government declaring a state of emergency and implementing "stay-at-home" orders in 22 states by mid-March (U.S. Department of Defense, 2020; World Health Organization, 2020). The pandemic caused significant economic upheaval and job loss (Kochhar, 2020), and those who remained employed experienced changes to their work lives (Anicich et al., 2020). The pandemic also introduced new stressors, such as job insecurity and concerns about health and well-being, for workers (Vaziri et al., 2020). Telework became the norm for many workers, blurring the boundaries between work and home life (Fisher et al., 2020) and resulting in increased job strain and decreased motivation, productivity, and job satisfaction (Rudolph et al., 2021).

The U.S. economy's public sector, including federal, state, and local governments, played a crucial role in providing guidance, decision-making, and public services during the pandemic (Eggers et al., 2020). However, the shutdown of the economy caused significant tax revenue losses, forcing public sector organizations to cope with budget cuts and COVID-19 mitigation measures, such as furloughs, payroll reductions, and hiring freezes (Kochhar, 2020; Hinkley, 2020). The changes in the work environment and how work was done caused by the pandemic resulted in new and increased job demands for public sector employees (Eggers et al., 2020).

Despite the significant impact of the pandemic on public sector employees, limited research has examined the effects of COVID-19-related job demands on burnout and engagement among this population (Demerouti & Bakker, 2023). The current study addressed this gap by employing the Job Demands – Resources (JD-R) model as a theoretical framework to

better understand how public sector employees are affected by COVID-19-related job demands and the support available to employees to protect their well-being.

The JD-R model categorizes working conditions as job demands or job resources (Bakker & Demerouti, 2014). Job demands are aspects of work that cost energy to address, while job resources help employees achieve work goals and meet job demands (Demerouti et al., 2001). The JD-R model posits that job demands impair employee health and are primarily related to burnout. In contrast, job resources induce a motivational process and are mainly related to employee engagement (Demerouti et al., 2001). Thus, COVID-19-related job demands and resources are expected to affect public sector employees' engagement and burnout.

Although the JD-R model has been employed to study job demands in the public sector, pre-pandemic research has mainly focused on the job demand of red tape (Hong, 2020), neglecting other potential job demands, such as workload and interpersonal conflict (Spector & Jex, 1998). The current study addressed this gap by focusing on COVID-19-specific job demands among public sector employees, contributing to the emerging literature on "pandemic-specific demands." The study aimed to provide insights into the harmful effects of COVID-19-related job demands on public sector employees, allowing public sector institutions to manage these demands and prepare for future crises.

The JD-R model also proposes that job resources, in addition to job demands, affect employee outcomes (Demerouti et al., 2001). Job resources are vital during crises, such as the COVID-19 pandemic, as they facilitate successful task performance under ambiguous work conditions and can protect employees' well-being from the harmful effects of demands (Demerouti & Bakker, 2023). Job resources can be categorized based on the type of resource, including social resources (i.e., coworker support, supervisor support, team atmosphere),

organizational resources (i.e., communication, alignment, value congruence), and personal resources (i.e., optimism, self-efficacy, resilience; Schaufeli, 2017). The current study sought to examine the effects of three types of resources that are proposed to be of particular importance to the population of public sector employees: the personal resource of public service motivation (PSM), the social resource of servant leadership, and the organizational resource of mission valence.

Personal resources are essential for empowering employees to control and impact their work environment and are related to their sense of resiliency (Xanthopoulou et al., 2007). Public service motivation (PSM) is a valuable personal resource for public sector employees. It is defined as a "general, altruistic motivation to serve the interests of a community of people, a state, a nation, or humankind" (Rainey & Steinbauer, 1999; p. 20). Although preliminary conceptual evidence (Bakker, 2015) and empirical evidence (Borst et al., 2019; Cooke et al., 2019; Gross et al., 2019) support the inclusion of PSM as a personal resource in the JD-R model, further research is needed to understand its role fully. Therefore, the current study aimed to advance PSM research by applying the JD-R model to understand better how it affects employee outcomes in the public sector.

Social resources are also essential to the social workplace environment and can be provided by other individuals at work (Roczneiwska et al., 2020). Servant leadership is proposed as a particularly appropriate and valuable social resource for public sector employees (Greenleaf, 1977; Schwarz et al., 2016). Servant leaders prioritize the needs of their followers over their self-interests and demonstrate strong moral behavior towards their followers and the organization (Ehrhart, 2004; Walumbwa et al., 2010). However, studies have yet to examine the role of servant leadership as a social resource in helping public sector employees deal with their work

demands during a crisis (e.g., the COVID-19 pandemic). Thus, the current study examined the direct effect of servant leadership as a social resource for public sector employees on employee outcomes and the potential moderating effect of servant leadership on the relationship between job demands and employee outcomes during the COVID-19 pandemic.

Organizational resources refer to contextual factors that influence how employees experience their work and can directly or indirectly affect engagement (Albrecht et al., 2018). During a crisis, organizational resources are particularly valuable in helping employees deal with significant changes in work conditions. The current study exaimed the organizational resource of mission valence. Wright and colleagues (2012) conceptualize mission valence as "employees' perceptions of the attractiveness or salience of an organization's purpose or social contribution" (p. 206). Research has yet to examine mission valence as an organizational resource in the framework of the JD-R model. However, considering how the variable is conceptualized, it seems appropriate to situate mission valence as an organizational resource in the context of the JD-R model. Therefore, the current study exaimed the direct effect of mission valence as an organizational resource for public sector employees on employee outcomes and the potential moderating effect of mission valence on the relationship between job demands and employee outcomes during the COVID-19 pandemic.

According to the JD-R model, job demands are primarily related to burnout, while job resources are mainly related to employee engagement (Bakker & Demerouti, 2017). However, less evidence supports the interactions between job demands and resources (Gonzalez-Mule et al., 2020). The JDC model and its extension, the JDC[S] model, propose that employee strain is most likely to occur when job demands exceed the resources of job control and work support and that these resources can buffer the adverse effects of job demands (Johnson & Hall, 1988). While

only half of the studies provide consistent empirical support for the JDC[S] model's interaction predictions (Doef & Maes, 1999; Schaufeli, 2017), recent research by Gonzalez-Mule et al. (2020) found that multiplicative models of strain were more strongly related to hindrance demands than challenge demands.

This study tested the buffering hypothesis by examining the moderating role of personal, social, and organizational resources on the relationship between COVID-19 hindrance demands and employee work engagement and job burnout, in line with the JDC[S] model (Johnson & Hall, 1988). Additionally, this study examined the reinforcement hypothesis by investigating the interaction among personal, social, and organizational resources and their effect on employee work engagement and job burnout. Results have implications for the importance of differentiating job demands as challenges or hindrances and the utility of context-specific resources when testing the moderation effects of resources.

The study's unique contribution lies in testing the interaction between PSM as a personal resource and servant leadership as a social resource on employee outcomes, as this has not been examined before (Schwarz et al., 2016; Bao et al., 2018; Shim et al., 2020). Additionally, the study conceptualized mission valence as an organizational resource in the JD-R model and explored its interaction with other resources. The research on P-O fit theory suggests that value congruence between an employee and their employer is significantly related to stress and work performance (Westerman & Cyr, 2004), which adds empirical and practical value to this line of research.

Overall, this study aimed to contribute to a small group of literature examining the utility of the JD-R model in explaining employee outcomes during a crisis like the COVID-19 pandemic. Specifically, the study used archival data from a sample of public sector employees

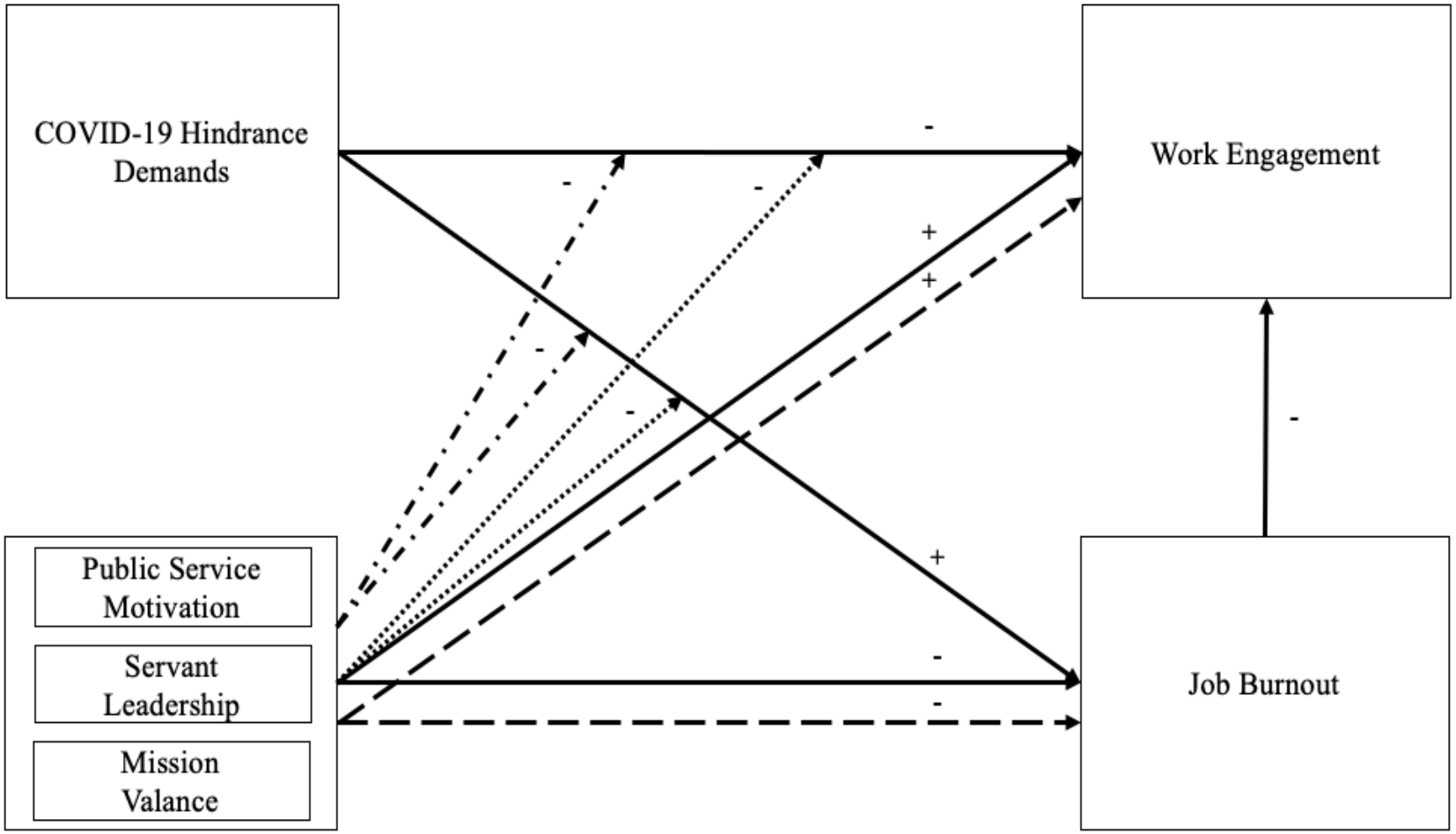
surveyed at two-time points, separated by approximately one month, during the pandemic. It was proposed that COVID-19 hindrance job demands would have direct and indirect effects (via job burnout) on employee work engagement. Personal, social, and organizational resources would also exhibit buffering and reinforcement moderating effects on job burnout and work engagement. Figure 1 presents a conceptual model that illustrates the direct, indirect, and moderating effects examined in this study.

Preliminary research has supported the JD-R model's ability to explain employee outcomes during a time of crisis (Demerouti & Bakker, 2023). This study provided additional information regarding the effects of COVID-19 hindrance job demands and valuable personal, social, and organizational resources for public sector employees during a time of crisis. Additionally, this study examined the role of relevant resources as "protective factors" that could buffer the adverse effects of COVID-19 hindrance job demands.

The study's results also contribute to the emerging field of behavioral public administration (BPA) by examining PSM and mission valence as resources using the JD-R model and providing insights for public sector organizations dealing with the effects of a crisis (i.e., COVID-19 pandemic) and managing changes resulting from it. These contributions can help ensure that public sector organizations and their employees have the resources needed to perform their jobs, continue to provide meaningful public services, and adequately deal with job demands during highly ambiguous and threatening situations.

Figure 1

Conceptual Model of Proposed Relationships



Note. Model depicts the direct effects of demands and resources on employee outcomes (solid line), the "buffering" effect of resources on the relationship between demands and employee outcomes (dotted line), the "reinforcement" effect of resources interacting to effect employee outcomes (dashed line), and the three-way interaction between two resources and demands on employee outcomes (dashed and dotted line).

CHAPTER II

OVERVIEW OF THE JOB DEMANDS – RESOURCES MODEL

The Job Demands-Resources (JD-R) model, developed by Demerouti and colleagues (2001), posits that all working conditions fall into two categories: job demands and job resources. Job demands require sustained physical and mental effort, leading to exhaustion or burnout, whereas job resources facilitate the attainment of work goals, stimulate personal growth, and reduce job demands (Schaufeli et al., 2004). Therefore, job demands and resources have unique positive effects on strain and engagement. The updated JD-R model suggests that job resources can buffer the negative impact of job demands on employee strain (Bakker & Demerouti, 2017). Essentially, the JD-R model synthesizes findings from numerous theories of job stress and work motivation over the past 20 years to explain how job demands and resources influence employee well-being, such as burnout and engagement (Bakker et al., 2023).

Before the JD-R model, the dominant frameworks for understanding the relationship between stress and job strain were the job demand–job control (JDC) model (Karasek, 1979), the job-demands-control-social support model (Johnson & Hall, 1988), and conservation of resources (COR) theory (Hobfoll, 1989). The JDC model focuses on job demands such as workload and job control, such as the amount of decision latitude one has over their job (Karasek, 1979). According to Karasek, jobs can be categorized using a 2 X 2 matrix of high and low demands and control, with the highest-strain jobs being those with high demands and low control. Furthermore, the JDC model proposes that high levels of job control can buffer the negative effects of high demands (Karasek, 1979). Johnson and Hall (1988) advanced the JDC model by introducing the concept of social support, which became known as the job-demands-control-social support (JDCS) model. Johnson (1989) found support for the JDCS model in the

form of a three-way interaction, suggesting that the job resources of job control and social support each buffer the negative effect of job demands on well-being. With a focus on resources, Hobfoll's (1989) conservation of resources (COR) theory suggests that people are motivated to obtain and protect resources and that stress is experienced when resources are lost, threatened, or when there is a failure to secure resources after attempts to do so. Based on these previous theoretical frameworks, Demerouti et al. (2001) proposed the JD-R model as a more general framework to incorporate various job demands and job resources. For example, according to the JD-R model, job control and social support are not the only relevant job resources. This section will focus on the JD-R model and discuss the evidence supporting its use.

Burnout

The concept of burnout was first introduced by Freudenberger (1974) to describe the gradual loss of motivation and emotional energy among volunteer workers. Maslach and colleagues further refined the concept and defined burnout as "a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do 'people-work' of some kind" (Maslach & Jackson, 1981, p. 99). The JD-R model has generalized burnout dimensions for a broader range of professions. Emotional exhaustion represents the core strain dimension of burnout. It refers to feeling emotionally drained by one's work, while depersonalization represents detachment and refers to cynical and negative responses toward others who are recipients of one's service or care. Reduced personal accomplishment refers to reduced feelings of competence and success at work (Bakker et al., 2014). Burnout is important due to its relationship with meaningful health- and job-related outcomes, including psychological and physical health problems, poorer general health, increased sickness absence, and reduced job performance (Bakker et al., 2014; Maslach et al., 2001).

Engagement

Engagement was introduced by Kahn (1990) as the effort employees put into their work because of identifying with it. Work engagement has been operationalized in different ways, and among researchers adopting the JD-R framework, the most common definition is from Schaufeli et al. (2002), who defined work engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p. 74). Vigor refers to the willingness to invest effort into one's work, dedication refers to a strong involvement in one's work, and absorption occurs when someone is fully concentrated and deeply engrossed in their work (Bakker et al., 2014). Engaged employees display high energy toward and strong identification with their work and experience better physical and mental health, higher creativity, and higher job performance (Bakker et al., 2004; Salanova et al., 2011; Sonnentag et al., 2012).

Job Demands

Demerouti et al. (2001) defined job demands as the physical, social, or organizational aspects of a job that require sustained mental or physical effort and are associated with physiological and psychological costs. Job demands such as high work pressure, role ambiguity, and exhausting interactions with customers or clients can lead to exhaustion and burnout (Bakker & Demerouti, 2007; Hargrove et al., 2011). The JD-R model suggests that employees engage in a form of performance protection in response to job demands, exerting greater effort to maintain performance and deal with demands, which can lead to physiological and psychological costs (Demerouti et al., 2001).

Hockey's (1993) control model of demand management suggests that employees facing job demands can experience indirect performance degradation through strategy adjustment, which involves narrowing attention and redefining task requirements, and fatigue after-effects,

which include making riskier choices and high levels of psychological fatigue. Over time, these strategies can lead to an energy depletion process and a state of exhaustion (Demerouti et al., 2001). While early iterations of the JD-R model broadly categorized work conditions into job demands or job resources, the updated JD-R model proposed by Crawford and colleagues (2010) differentiates between challenge and hindrance demands. The results of their study show that challenge demands, such as time pressure and responsibility, can improve employee engagement. In contrast, hindrance demands, such as role ambiguity and conflict, can reduce engagement and increase burnout (Crawford et al., 2010).

Job Resources

Job resources are aspects of a job that facilitate personal growth, reduce the physiological and psychological costs of job demands, and help employees achieve work goals (Demerouti et al., 2001). Unlike demands, the JD-R model posits that resources initiate a motivational process that leads to higher work engagement. Job resources that fulfill basic psychological needs, such as autonomy, competence, and relatedness, can promote intrinsic motivation, while resources that help employees achieve work goals play an extrinsic motivational role (Bakker & Demerouti, 2007). Resource-rich work environments increase employees' willingness to expend effort and energy to achieve work tasks, leading to a higher likelihood of employees accomplishing work goals (Bakker & Demerouti, 2007).

Personal resources, such as self-efficacy and optimism, contribute to achieving work goals and personal growth (Schaufeli & Taris, 2014). Social resources obtained from others in the work environment, such as a positive work environment or supervisor support, also contribute to personal growth and achieving work goals (Roczneiwska et al., 2020; Schaufeli, 2017). Organizational resources, such as supportive organizational leadership and human

resource practices, a clear organizational vision, and a positive organizational climate, affect how employees experience their work and can be utilized by multiple employees simultaneously (Albrecht et al., 2018).

JD-R Model in Times of Crisis

The Job Demands-Resources (JD-R) model has been used to examine the impact of work during the COVID-19 pandemic on employees, organizations, and society (Bapuji et al., 2020; Demerouti & Bakker, 2023). Recent studies have identified COVID-19-related demands and resources, such as the risk of infection and leadership characteristics, and have provided preliminary evidence that the pandemic has altered job demands and resources for many employees (Dolce et al., 2020; Kniffin et al., 2021; Thielsch et al., 2021). Using the JD-R model, researchers have identified industry-specific job demands that have intensified due to the pandemic, such as workload in healthcare, job insecurity for tourism, and work-family conflict for new remote workers (Barello et al., 2020; Gossling et al., 2020; Vaziri et al., 2020). Consequently, Demerouti and Bakker (2023) concluded that the COVID-19 pandemic has increased job demands for all employees, resulting in altered job characteristics that require employees to adapt to new ways of working. In times of crisis, such as during the COVID-19 pandemic, when uncertainty and ambiguity are high, job demands intensify. Job resources become crucial in helping employees meet their demands and protect against their harmful effects (Demerouti & Bakker, 2023).

Empirical Evidence in Support of the JD-R Model

The JD-R model's core propositions have received significant empirical support since its introduction in 2001 (Bakker & Demerouti, 2017). Multiple meta-analyses have demonstrated positive relationships between job demands and burnout, as well as between job resources and

work engagement (Alarcon, 2011; Crawford et al., 2010; Gonzalez-Mule et al., 2020; Halbesleben, 2010; Lesener et al., 2019; Nahrgang et al., 2011). For example, Alarcon's (2011) meta-analysis on the health impairment process found significant positive relationships between job demands and burnout and significant negative relationships between burnout and health. Nahrgang et al. (2011) found that both burnout and engagement were significantly related to working safely, with job resources positively associated with work engagement and negatively related to safety outcomes. Crawford et al. (2010) found significant relationships between hindrance and challenge demands and burnout and between job resources and work engagement and burnout. Lesener et al. (2019) provided further support for the JD-R model by using longitudinal evidence, showing that job demands and resources at Time 1 significantly related to burnout and engagement at both Time 1 and Time 2. Finally, Gonzalez-Mule et al.'s (2020) meta-analysis examined the relationship between job demands and resources and employee job strain, finding that job demands were positively related to job strain while job resources were negatively related. Together, these meta-analyses provide ample support for the core propositions of the JD-R model.

Multiplicative and Additive Models

Theoretical stress models have been proposed to explain how job demands and job resources are related to strain. Specifically, the multiplicative and additive models have been studied (Gonzalez-Mule et al., 2020). The multiplicative model suggests that job demands' effect on strain depends on the available job resources. When job demands are high, but job resources are also high, individuals perceive the demands as motivating and stimulating. This model suggests that job resources can buffer the negative effects of job demands (Gonzalez-Mule et al., 2020). In contrast, the additive model posits that job demands and job resources have unique and

independent effects on strain. High job demands result in strain regardless of the amount of job resources, while high job resources lead to less strain due to their motivating and health-protecting nature (Demerouti et al., 2001; Crawford et al., 2010). The Job Demands-Resources (JD-R) model, consistent with the additive model, suggests that both job demands and job resources have independent direct relationships with job strain (e.g., burnout) and work engagement (Bakker & Demerouti, 2017).

Both models have received empirical support (Gonzalez-Mule et al., 2020). The lack of consistent support for the multiplicative model inherent in the Job Demands-Control-Support (JDCS) model served as the impetus for developing the JD-R model (Gonzalez-Mule et al., 2020). Research supporting the additive model inherent in the JD-R conceptualization found that job demands and resources are positively and negatively related to burnout, respectively (Alarcon, 2011; Crawford et al., 2010). However, the updated JD-R model also investigates the interaction between demands and resources in a way consistent with the multiplicative model (Bakker & Demerouti, 2017). Although research on the updated JD-R model and the multiplicative model is mixed, the most recent meta-analysis by Gonzalez-Mule and colleagues (2020) suggests that the additive model of stress tends to receive more support than the multiplicative model of stress. The authors also found that both models are better predictors of strain when job demands are conceptualized as hindrances rather than challenges. Overall, the multiplicative and additive models of stress offer different but complementary ways to understand the relationships between job demands, job resources, and employee strain.

CHAPTER III

COVID-19 HINDRANCE JOB DEMANDS, JOB BURNOUT, AND WORK ENGAGEMENT

The Relationship Between Job Burnout and Work Engagement

The Job Demands-Resources (JD-R) model has attracted considerable research attention for its study of job burnout and work engagement as outcome variables that impact employee health and organizational performance (Maricutoiu et al., 2017). Although these two constructs are highly correlated, there is an ongoing debate regarding their distinctiveness and temporal order. This study adopted the perspective that job burnout and work engagement are separate but related constructs and that burnout will negatively affect engagement due to the depletion of physical, cognitive, and emotional resources necessary for engagement.

Previous conceptualizations of the JD-R model have suggested that job strain is negatively related to motivation (Bakker & Demerouti, 2017). Similarly, the current study proposed that job burnout negatively impacts work engagement. Burnout is characterized by an energy depletion process that limits employees' ability to dedicate sufficient resources to work, a critical component of engaged employees (Kahn, 1990). Engagement is the opposite experience of burnout and is a distinct construct from burnout in multiple studies, as burnout and engagement do not merge into a single factor and have different patterns of correlations with relevant variables (Hakanen & Schaufeli, 2012; Langelaan et al., 2006; Maricutoiu et al., 2017; Schaufeli et al., 2002; Schaufeli & Bakker, 2004; Schaufeli et al., 2009).

The theoretical and empirical rationales for the negative relationship between work engagement and burnout are grounded in the conservation of resources theory (Hobfoll, 2002). According to this theory, employees experiencing burnout are susceptible to a "loss spiral" in

which they progressively lose resources and engage in self-undermining behaviors, such as making mistakes and creating conflicts at work. These employees are also less likely to benefit from a "gain spiral" in which existing resources facilitate the acquisition of additional resources and job crafting. Burnt-out employees lack the energy and resources to foster work engagement and are more likely to protect existing resources than use them to meet job demands (Bakker & Costa, 2014).

Empirical evidence, including longitudinal studies and meta-analyses, supports the proposition that burnout is negatively related to engagement (Hakanen & Schaufeli, 2012; Maricutoiu et al., 2017). Additional research has shown that burnout is related to self-undermining behaviors, loss spirals, and a lack of resources, all of which threaten work engagement (Bakker & Costa, 2014; De Beer et al., 2013; Ten Brummelhuis et al., 2011). Thus, the hypothesis that job burnout would be negatively related to work engagement was proposed.

Hypothesis 1: Job burnout will be negatively related to work engagement.

The Effects of COVID-19 Hindrance Job Demands

The COVID-19 pandemic has caused significant disruptions to the U.S. economy and organizations, resulting in new and unique job demands for employees. A pivotal moment in the U.S. government's response to COVID-19 was March 16, 2020, when the "15 Days to Slow the Spread" initiative was announced by President Trump and the White House Coronavirus Task Force, which included formal stay-at-home and social distancing guidelines (Anicich et al., 2020; White House, 2020). Organizations had to adjust their business practices to comply with federal governmental regulations, leading to changes in employees' job demands and the resources available to them (Demerouti & Bakker, 2023).

One of the most significant changes resulting from COVID-19 was the rapid shift to teleworking for both private and public sector employees (Vaziri et al., 2020). This change brought about different types of work tasks, disruptions to normal work routines, and the need to interact with coworkers in a new virtual medium, along with the demands of working from home. For employees who continued to work on-site, new safety policies and work schedules had to be implemented, and they had to collaborate with remote coworkers (Rudolph et al., 2021). Ultimately, the COVID-19 pandemic has had a significant impact on the work life of all employees, regardless of occupation, due to the ambiguity and uncertainty associated with a crisis, leading to increased and new types of work demands that make it challenging for employees to complete their core work tasks successfully.

Challenge vs. Hindrance Job Demands. The Job Demands-Resources (JD-R) model proposes that every occupation has factors associated with work engagement and burnout, which can be categorized as either job demands or job resources (Demerouti et al., 2001). According to Demerouti and colleagues (2001), job demands refer to the "physical, social, or organizational aspects of the job that require sustained physical or mental effort…" (p. 501). Cavanaugh and colleagues (2000) proposed that work outcomes (i.e., work engagement) would have different relationships with different types of job demands based on the transactional theory of stress (Lazarus & Folkman, 1984). The different types of job demands can be categorized as challenge or hindrance demands. Challenge demands include specific job demands such as time pressure and high levels of responsibility, which were found to be related to the positive work outcome of job satisfaction and negatively related to job search (Cavanaugh et al., 2000). Hindrance demands include specific job demands such as organizational politics and job insecurity, which

were negatively related to the positive work outcome of job satisfaction and positively related to job search (Cavanaugh et al., 2000).

Subsequent empirical studies have supported the proposition that certain types of demands are more likely to be appraised as hindrance or challenge demands (Boswell et al., 2004; Lepine et al., 2005), suggesting that the hindrance and challenge categorization of job demands persists despite individual differences that might shape perceptions of job demands. O'Brien and Beehr (2019) conducted a recent review of the challenge-hindrance framework. They concluded that there is enough evidence to support the validity and usefulness of the challenge-hindrance job demand distinction in research and practice. Several meta-analyses consistently supported the core proposition in the challenge-hindrance framework, which states that hindrance job demands are mainly related to negative outcomes, and challenge demands are more often related to positive or neutral outcomes (O'Brien & Beehr, 2019). The challenge-hindrance demand categorization has become the dominant view in the occupational health literature, with over 11,000 citations in meta-analyses on the topic as of October 2022 (Mazzola & Disselhorst, 2019; Podsakoff et al., 2023).

COVID-19 Hindrance Job Demands. The COVID-19 pandemic, along with other historical pandemics and economic crises, has led to significant job demands for employees due to the pandemic-induced changes in the workplace (Demerouti & Bakker, 2023). The formal stay-at-home and social distancing guidelines issued by the government have forced employees to shift to teleworking (Anicich et al., 2020; Vaziri et al., 2020). "Essential" employees in "high necessity" jobs continued to work in their physical workspace under different circumstances, while other employees experienced significant layoffs and furloughs (Rudolph et al., 2021; Vaziri et al., 2020). As a result of these changes, all employees have faced new and increased job

demands (Demerouti & Bakker, 2023), which have led to a highly stressful work environment for many employees (Glass, 2020).

This study focused on hindrance job demands resulting from the COVID-19 pandemic, following the challenge-hindrance categorization of job demands proposed by Cavanaugh et al. (2000). The sudden and drastic changes to the work environment caused by the pandemic were not designed to motivate or challenge employees, but rather to comply with government regulations to stop the spread of the virus and maintain business operations. Consequently, many job demands during the pandemic are likely to be viewed by employees as constraints or barriers to achieving their work goals (hindrance) rather than opportunities to learn or demonstrate competency (challenge). Therefore, the COVID-19 hindrance job demands of interest in this study were expected to drain employees' energy, leading to lower engagement levels and higher levels of burnout.

The study examined the effects of COVID-19 hindrance job demands on employee outcomes using earlier taxonomies of organizational stressors to categorize these demands (e.g., Sonnentag & Frese, 2013; Spector & Jex, 1998). Specifically, Spector and Jex's (1998) organizational constraints framework and Sonnentag and Freses' (2013) stressors in organizational life were used to categorize the COVID-19 hindrance job demands into four categories: organizational constraints, role stressors, social stressors, and work-schedule related stressors. This approach provided theoretical and empirical rationale for including job demands in the study and contributed to the emerging literature on COVID-19-specific demands (Demerouti & Bakker, 2023). Pindek and Spector's (2016) meta-analytic data suggest that organizational constraints remain a unique predictor of strain outcomes even when controlling for role and social stressors, indicating the importance of examining multiple types of stressors.

Organizational Constraints. This study examined the impact of COVID-19 job demands that hinder employees' task performance at work, known as organizational constraints (Pindek & Spector, 2016). These constraints include factors within the immediate work environment, such as equipment, supplies, and job-related information (Peters & O'Connor, 1980). Organizational constraints make it difficult for employees to achieve task goals and can cause stress and frustration. The COVID-19 pandemic has increased job demands for employees, including teleworking, which has become mandatory in many cases, leading to potential interruptions from others (Anicich et al., 2020; Kramer & Kramer, 2020). Other constraints include a lack of necessary equipment or supplies, outdated rules and procedures, and limited job-related information, inhibiting task performance (Demerouti & Bakker, 2023; Peters & O'Connor, 1980; Rudolph et al., 2021). Organizational constraints were one category of COVID-19 hindrance demands examined in this study.

Role Stressors. This study also examined COVID-19 job demands related to employees' work roles, known as role stressors (Cordes & Dougherty, 1993; Guthier et al., 2020). The COVID-19 pandemic has caused unpredictability, increasing ambiguity, uncertainty in job roles, and conflicts between job roles (Demerouti & Bakker, 2023; Kniffin et al., 2021; Rudolph et al., 2021). Additionally, reductions in the workforce through layoffs and furloughs can lead to increased workloads for remaining employees (Ogden, 2020; Rudolph et al., 2021). Role conflict, ambiguity, and overload are all examples of role stressors and can make it difficult for employees to achieve work goals (Cammann et al., 1979; Cordes & Dougherty, 1993; Kahn, 1978). Role stressors are another category of COVID-19 hindrance demands examined in this study.

Social Stressors. The study also examined job demands associated with the COVID-19 pandemic that relate to negative social interactions with coworkers, known as social stressors. The COVID-19 pandemic has resulted in negative emotions for many employees, leading to increased interpersonal conflict (Rudolph et al., 2021; Jha & Jha, 2010). Remote work can cause isolation and reduced helping behaviors among coworkers, making it more difficult for employees to seek assistance (Allen et al., 2015; Kniffin et al., 2021). The study specifically examined coworker-related demands, including personal conflict with and demanding coworkers, as another category of COVID-19 hindrance demands.

Work Schedule-Related Stressors. Finally, the study examined COVID-19 job demands related to employee work schedule changes, known as work schedule-related stressors. The COVID-19 pandemic has disrupted work routines for both remote and on-site employees, resulting in longer workdays, staggered shifts, and reduced face-to-face interactions (DeFilippis et al., 2020). These changes can make it more difficult for employees to achieve work goals and are considered hindrance demands. Work schedule-related stressors were another category of COVID-19 hindrance demands examined in this study.

Direct Effects of COVID-19 Hindrance Job Demands

The JD-R model (Demerouti et al., 2001) predicts that COVID-19 hindrance job demands will be positively related to burnout, while more recent versions of the model (e.g., Crawford et al., 2010) suggest that these demands will be negatively related to engagement. However, limited research has examined the effects of COVID-19-specific demands using the JD-R framework (Demerouti & Bakker, 2023). This study contributed to this emerging research by investigating the effects of COVID-19 hindrance job demands among public sector employees during the pandemic.

According to the JD-R model, job demands activate an energy depletion process that leads to exhaustion (Bakker & Demerouti, 2007). This is further explained by the transaction theory of stress (Lazarus & Folkman, 1984), which suggests that stressful situations can be appraised as threatening or challenging, and determining the threat level associated with a given demand can cause fatigue. This explains the positive relationship between job demands and burnout, as cognitive resources are needed to appraise job demands, and extra effort is required to meet them (Demerouti et al., 2001; Hockey, 1993).

Empirical studies support the theoretical argument that COVID-19 hindrance job demands will be positively related to burnout (Lee & Ashforth, 1996). Role ambiguity, role conflict, role stress, stressful events, workload, and work pressure are job demands most predictive of burnout and fit the categorization of hindrance demands (Cavanaugh et al., 2000). Hindrance demands are more strongly related to burnout than challenge demands (Crawford et al., 2010; Lepine et al., 2005).

Recent research during the COVID-19 pandemic has found links between job demands and burnout. Disruptions at work, work changes, and technological demands have all been found to have significant direct effects on burnout (Mockaitis et al., 2022; Sklar et al., 2021; Ninaus et al., 2021). Based on these findings and the JD-R model, it was predicted that:

Hypothesis 2: COVID-19 hindrance job demands will be positively related to job burnout.

The transactional theory of stress (Lazarus & Folkman, 1984) provides a comprehensive account of the stress appraisal and coping process for job demands. Unlike challenge demands, hindrance demands are linked to passive problem-solving behaviors such as withdrawal (Crawford et al., 2010; Lepine et al., 2005). Vroom's (1964) expectancy theory complements this

framework and describes how motivation differs between challenge and hindrance demands. According to the valence-instrumentality-expectancy (VIE) model, the motivation to perform a task is determined by the individual's assessment of the task's value, probability, and outcome (Van Eerde & Thierry, 1996). Hindrance demands are perceived as threatening and harmful to personal growth, leading to low valence, instrumentality, and expectancy, negatively affecting motivation (Crawford et al., 2010; Lepine et al., 2005).

Empirical evidence supports the claim that hindrance demands negatively affect work engagement (Crawford et al., 2010; Lepine et al., 2005). Several meta-analyses and primary studies have found that hindrance demands decrease work motivation and engagement (Breevaart & Bakker, 2018; Tadic et al., 2015). Therefore, it was expected that employees who experienced and reported more COVID-19 hindrance job demands would also report less work engagement. Hence,

Hypothesis 3: COVID-19 hindrance job demands will be negatively related to work engagement.

Indirect Effects of COVID-19 Hindrance Job Demands

The current study proposed that COVID-19 hindrance job demands would have both direct and indirect effects on work engagement, with the latter being mediated by job burnout. Specifically, it was expected that COVID-19 hindrance demands would have a negative indirect effect on work engagement, as employees exposed to these demands are likely to experience job burnout, which would negatively affect their work engagement.

The indirect effect of job demands on work engagement through the mediating path of job burnout aligns with the updated Job Demands-Resources (JD-R) model proposed by Bakker and Demerouti (2017). The original formulation of the JD-R model proposed that job demands

are the key drivers of the exhaustion component of burnout (Bakker & Demerouti, 2007), and subsequent studies have found empirical support for this proposition (Crawford et al., 2010). Employees who face job demands are forced to exert additional effort to meet those demands at a psychological and physiological cost, leading to an energy depletion process that can result in job burnout (Bakker & Demerouti, 2007). Prolonged exposure to job demands can cause employees to psychologically distance themselves from their work, which is a primary characteristic of job burnout (Bakker et al., 2014). Multiple meta-analyses have provided empirical support for the theoretical link between job demands and job burnout (Crawford et al., 2010; Lepine et al., 2005).

Job burnout is also negatively related to work engagement, as detailed earlier. The Conservation of Resources (COR) theory proposed by Hobfoll (1989) explains this negative relationship, stating that employees unable to cope with and manage job demands will experience burnout, and employees experiencing burnout will enter a loss spiral and engage in self-undermining behaviors. Burnt-out employees who engage in self-undermining behaviors are less likely to complete work tasks and proactively change their work environment to foster engagement (Bakker & Costa, 2014; Sonnentag, 2017). Empirical evidence supports COR theory, finding that burnt-out employees engage in more self-undermining behaviors and progressively are less able to manage job demands (i.e., loss spiral; Ten Brummelhuis et al., 2011; Linden et al., 2005; Van Gelderen et al., 2014). Longitudinal data have also supported burnout as an antecedent of engagement (Maricutoiu et al., 2017).

Therefore, based on the aforementioned theoretical and empirical rationale, the current study predicted that COVID-19 hindrance job demands would have a negative indirect effect on work engagement mediated by job burnout. Specifically, it was predicted that COVID-19

hindrance demands would positively relate to job burnout, which would negatively relate to work engagement.

Hypothesis 4: COVID-19 hindrance job demands will have a negative indirect effect on work engagement, mediated by job burnout.

CHAPTER IV

PERSONAL, SOCIAL, AND ORGANIZATIONAL RESOURCES

Job resources are physical, psychological, social, or organizational aspects of a job that can reduce job demands, facilitate personal growth, and help employees achieve work goals (Demerouti et al., 2001). Initially, the Job Demands-Resources (JD-R) model only focused on external resources, such as job control, task variety, and social support, but personal resources, including self-efficacy, optimism, and organization-based self-esteem, were later included (Bakker et al., 2004; Bakker et al., 2014; Hobfoll et al., 2003; Xanthopoulou et al., 2009). The JD-R model posits that employees lacking external or personal resources may struggle to cope with job demands, resulting in reduced motivation and withdrawal (Demerouti et al., 2001).

In light of the COVID-19 pandemic, providing job resources to employees can help mitigate anxiety caused by uncertainty (Sinclair et al., 2020). Identifying job resources available during the pandemic is essential for safeguarding employee health and well-being, particularly for public sector organizations facing challenges in providing essential services while grappling with limited resources (Eggers et al., 2020). In this context, three job resources relevant to the public sector were examined in the current study, namely public service motivation, servant leadership, and mission valence.

Public Service Motivation

The concept of public service motivation (PSM) was introduced by Perry and Wise (1990) to describe the unique motives that drive public sector employees. PSM refers to an individual's predisposition to respond to motives that concern the interest of a larger political entity and motivate them to act accordingly (Vandenabeele, 2007). Research has demonstrated that high levels of PSM are associated with positive work-related outcomes such as

organizational commitment, job satisfaction, and job performance (Brewer et al., 2000; Crewson, 1997; Wright & Pandey, 2008).

The current study examined PSM as a personal resource that empowers public sector employees to impact their work environment positively and cope with job demands. Public service motivation meets Demerouti et al.'s (2001) conceptualization of a resource that helps employees achieve work goals, reduce job demands, and stimulate personal growth and development. High levels of PSM equip public sector employees with resiliency and positive self-evaluations that predict goal-setting, motivation, performance, and job satisfaction (Bakker et al., 2014). Moreover, PSM is relatively stable over time, making it a valuable resource that can withstand changes in the job or work environment (Bakker, 2015).

In the context of the current study, PSM was proposed to be a vital resource for public sector employees during the COVID-19 pandemic. The pandemic has amplified the importance of public sector employees' roles in managing the response and recovery efforts. Individuals with high PSM have an opportunity to fulfill their desire to serve others and make a positive impact on society. Recent research has highlighted the self-sacrificing nature of public sector employees with high PSM during the pandemic and suggested that PSM can help shield public sector employees from some of the hindrance demands they experience (Schuster et al., 2020). In summary, PSM is a relevant and essential personal resource for public sector employees during the COVID-19 pandemic, providing them with the motivation and resiliency to serve the greater good.

Servant Leadership

Leadership is a process that involves influencing a group of individuals to achieve a common goal (Northouse, 2019). In recent years, servant leadership has gained attention as a

leadership style that emphasizes leaders' attentiveness to the concerns of their followers and putting followers first (Greenleaf, 1970; Spears, 2010). Servant leadership is characterized by ten key characteristics, including: listening, empathy, healing, and stewardship (Spears, 2010). Servant leaders prioritize the needs of their followers, which distinguishes this leadership style from others, such as transformational leadership (Bass, 2000).

The current study examined the role of servant leadership as a social resource that can help public sector employees achieve work goals and reduce job demands (Demerouti et al., 2001). Social resources, such as supervisor support in the form of servant leadership, are essential resources provided by others in the workplace (Roczneiwska et al., 2020). Research has classified other leadership styles, such as transformational leadership, as a resource within the JD-R model (Bass et al., 2016; Syrek et al., 2013). Meta-analytic evidence supports the notion that servant leadership is a resource that facilitates task and contextual performance, as well as organizational and affective commitment (Hoch et al., 2018). The relationship between servant leadership and these outcomes supports the idea that resources help employees achieve work goals.

During the COVID-19 pandemic, servant leadership is proposed as a valuable social resource for public sector employees, given the stress associated with the pandemic (Sinclair et al., 2020). Servant leadership provides employees with a leader who knows their needs and places their well-being first, which can help them manage COVID-19 hindrance job demands. Furthermore, given social distancing rules and teleworking arrangements, supervisor support is critical, and servant leadership can provide necessary support (Sinclair et al., 2020).

Mission Valence

Mission valence refers to employees' perception of their organization's mission and their level of attraction to it, which can motivate them to perform their job well (Rainey & Steinbauer, 1999). An organization's mission can be evaluated based on six conditions: difficult but feasible, clear and understandable, worthwhile and legitimate, exciting, important, and distinctive (Rainey & Steinbauer, 1999). The current study examined the role of mission valence as an organizational resource in helping public sector employees achieve work goals and reduce job demands within the context of the COVID-19 pandemic.

The importance of organizational missions has interested public management scholars for over 40 years (Wright & Pandey, 2011). Theoretical research has postulated the motivational effects of mission valence (Rainey & Steinbauer, 1999; Wright, 2001), and empirical studies have found mission valence to be related to important outcomes such as organizational commitment (Pandey et al., 2008), job satisfaction (Wright & Pandey, 2011), and work motivation indirectly through job importance (Wright, 2007). When viewed through the Job Demands-Resources (JD-R) model, mission valence can be conceptualized as an organizational resource that stimulates employee motivation and facilitates goal achievement and personal growth (Demerouti et al., 2001). A meaningful and important organizational mission can influence an individual employee's job experience, and multiple employees can be motivated by the same mission simultaneously.

The COVID-19 pandemic has highlighted the importance of public sector employees and their organizations in stopping the spread of the virus and facilitating recovery (International Labour Organization, 2020). Certain public services must continue regardless of the pandemic's status, making the mission of public sector organizations especially relevant and meaningful

during this time. Thus, mission valence is a valuable resource for public sector employees during the pandemic, and the current study examined its role in facilitating positive work experiences and motivation.

Direct Effects of Resources on Work Engagement and Job Burnout

According to the JD-R model (Demerouti et al., 2001), public service motivation (personal resource), servant leadership (social resource), and mission valence (organizational resource) are expected to be positively related to work engagement and negatively related to job burnout (Crawford et al., 2010). Recent research has also explored the direct main effects of resources such as leadership characteristics, job autonomy, and perceived organizational support on employee outcomes during the COVID-19 pandemic (Demerouti & Bakker, 2023; Mockaitis et al., 2022; Ninaus et al., 2021). This study contributed to this emerging research area by examining the prevalence of these three specific resources among public sector employees and their effect on employee outcomes of job burnout and work engagement.

The JD-R model defines job resources as "physical, psychological, social, or organizational aspects of the job that can help employees achieve work goals, reduce job demands, and stimulate personal growth and development" (Demerouti et al., 2001, p. 501). Job resources are negatively related to disengagement and exhaustion (Demerouti et al., 2001). Later research suggested that job resources trigger a motivational process independent of the health impairment process triggered by job demands (Bakker et al., 2014). Job resources are important predictors of positive work outcomes, such as work engagement and satisfaction (Bakker et al., 2007; Bakker et al., 2014). Theories such as job characteristics theory (Hackman & Oldham, 1980), conservation of resources (COR) theory (Hobfoll, 2002), and self-determination theory

(Deci & Ryan, 1985) provide explanations for how resources instigate a motivational process and fulfill basic psychological needs.

Research has shown that job resources are positively related to work engagement (Schaufeli & Bakker, 2004), including a significant positive relationship between resources and engagement across multiple employee samples (Crawford et al., 2010). Given this, it was expected that:

Hypothesis 5: Public service motivation, servant leadership, and mission valence will be positively related to work engagement.

The JD-R model suggests a lack of resources is associated with burnout (Demerouti et al., 2001; Schaufeli & Taris, 2014). Conservation of resources theory also provides a rationale for this proposition, stating that stress occurs when resources are lost or threatened, leading to burnout over time (Hobfoll & Freedy, 1993). Research has demonstrated a significant negative relationship between job resources and burnout (Bakker et al., 2003; Crawford et al., 2010; Hakanen et al., 2008; Schaufeli & Bakker, 2004;). Therefore, it was predicted that:

Hypothesis 6: Public service motivation, servant leadership, and mission valence will be negatively related to job burnout.

Indirect Effects of Resources on Work Engagement via Job Burnout

The proposed indirect effect of personal, social, and organizational resources on work engagement through job burnout is based on Schaufeli and Bakker's (2004) revised JD-R model, which suggests that resources can protect against burnout and promote work engagement. In the original JD-R model, Demerouti et al. (2001) proposed that a lack of resources was associated with increased levels of burnout. However, in the revised model, Schaufeli and Bakker (2004) proposed that an abundance of resources could protect against burnout. This aligns with the

conservation of resources (COR) theory, which suggests that adequate resources can help employees deal with job demands and protect against the stress of losing resources (Hobfoll & Freedy, 1993).

Furthermore, job burnout is negatively related to work engagement (Bakker & Demerouti, 2017; Wrzesniewski & Dutton, 2001). When burnout is low, employees have more energy available to engage in job crafting, a process by which employees proactively change their work environment and make their work more meaningful (Bakker & Demerouti, 2017; Wrzesniewski & Dutton, 2001). Therefore, the negative relationship between burnout and engagement suggests that low levels of burnout are related to higher levels of work engagement.

The direct effects of resources on burnout and burnout on work engagement explain the proposed indirect effect of resources on work engagement through burnout. An abundance of resources will be associated with lower levels of burnout, which will create the conditions under which employees can engage in job crafting and proactively enhance their work environment. Following COR theory and the JD-R model, an employee with abundant resources will experience low levels of burnout and, thus, higher levels of work engagement. Therefore, it was predicted that:

Hypothesis 7: Public service motivation, servant leadership, and mission valence will have positive indirect effects on work engagement, mediated by job burnout.

CHAPTER V

MODERATING ROLE OF PERSONAL, SOCIAL, AND ORGANIZATIONAL RESOURCES

Job demands can negatively affect employee well-being, particularly when insufficient resources exist to address them (Bliese et al., 2017; Demerouti et al., 2001). To mitigate these effects, research has focused on the potential for job resources to buffer or reinforce the relationship between demands and employee outcomes (Bakker et al., 2005; Demerouti & Bakker, 2023). The job demand-control (JDC) and job demand-control-support (JDCS) models (Karasek, 1979; Theorell & Karasek, 1996; Johnson & Hall, 1988) provide a theoretical foundation for this research.

In addition to examining the buffering hypothesis, recent research has called for attention to resource interactions (Demerouti & Bakker, 2023). The reinforcement hypothesis suggests that resources may interact to strengthen their positive effects (Ross & Mirowsky, 2010), especially during times of crisis (Demerouti & Bakker, 2023). Therefore, this study examined the role of public service motivation, servant leadership, and mission valence as both buffers and reinforcements in the relationship between COVID-19 hindrance job demands and job burnout and work engagement. Understanding the availability and usefulness of resources in protecting employee well-being is crucial, particularly during times of high demand.

The Buffering Hypothesis

Several stress models, including multiplicative models of stress, suggest that resources can moderate the relationship between job demands and employee outcomes (Gonzalez-Mule et al., 2020). The JDCS model and updated JD-R models propose that resources such as job control and social support can buffer or weaken the negative effects of job demands (Bakker et al., 2005;

Bakker & Demerouti, 2017; Johnson & Hall, 1988; Theorell & Karasek, 1996), while conservation of resources (COR) theory suggests that resources help employees meet demands and accumulate future resources (Hobfoll, 1989). Empirical studies have provided support for the buffering hypothesis, indicating that resources can weaken the harmful effects of job demands on employee outcomes (Bakker et al., 2005; Bakker & Demerouti, 2017; Igic et al., 2017; Xanthopoulou et al., 2007). However, some studies have also found resources to have a reversal effect, actually reversing the relationship between demands and outcomes (Ganster et al., 2001; Gonzalez-Mule & Cockburn, 2017). Although some meta-analyses found no evidence for a moderating effect of resources (Gonzalez-Mule et al., 2020; Viswesvaran et al., 1999), recent research suggests that resources might best serve as a buffer for the harmful effects of hindrance demands (Gonzalez-Mule et al., 2020). These findings suggest that the mixed support for multiplicative models of stress may be due to previous research not distinguishing between types of demands (Doef & Maes, 1999).

The current study built on the meta-analytic research of Gonzalez-Mule and colleagues (2020) by testing the moderating propositions inherent in multiplicative models of stress while specifying the type of demands. Specifically, the study examined the potential moderating effect of personal, social, and organizational resources on the relationship between COVID-19 hindrance job demands and job burnout and the relationship between COVID-19 hindrance job demands and work engagement. The resources were proposed to have buffering effects, and it was predicted that they would weaken the undesirable effects of demands on burnout and engagement. The study focused on public sector employees and unique resources suitable for this sector.

The matching hypothesis proposed by De Jonge and Dormann (2006) explains why resources may buffer the relationship between job demands and employee outcomes. The matching hypothesis suggests that the extent to which resources buffer the relationship between job demands and employee outcomes is due to the extent to which demands, resources, and employee outcomes match. The current study proposed that personal, social, and organizational resources will buffer the harmful effects and stress of hindrance demands.

The personal resource of public service motivation (PSM) refers to "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations" (Perry & Wise, 1990, p. 368). Employees with high PSM are ultimately motivated to serve the public interest and are driven to self-sacrifice (Perry, 1996). It was predicted that:

> *Hypothesis 8*: Public service motivation will moderate the relationship between COVID-19 hindrance job demands and job burnout, such that the positive relationship between demands and burnout will be weaker when public service motivation is high.
>
> *Hypothesis 9*: Public service motivation will moderate the relationship between COVID-19 hindrance job demands and work engagement, such that the negative relationship between demands and engagement will be weaker when public service motivation is high.

The social resource of servant leadership refers to "leadership that focuses on putting the needs of followers and stakeholders first" (Hoch et al., 2018, p. 506). A servant leader is uniquely focused on how hindrance job demands affect their employees, making this resource an invaluable protective factor. Therefore, it was predicted that:

Hypothesis 10: Servant leadership will moderate the relationship between COVID-19 hindrance job demands and job burnout, such that the positive relationship between demands and burnout will be weaker when servant leadership is high.

Hypothesis 11: Servant leadership will moderate the relationship between COVID-19 hindrance job demands and work engagement, such that the negative relationship between demands and engagement will be weaker when servant leadership is high.

The organizational resource of mission valence refers to an employee's perception of the attractiveness or importance of an organization's purpose or social contribution (Wright et al., 2012). High mission valence is associated with reduced absenteeism and lower levels of employee stress (Wright & Pandey, 2011), making it a vital resource to buffer the relationship between job demands and employee outcomes. Therefore, it was predicted that:

Hypothesis 12: Mission valence will moderate the relationship between COVID-19 hindrance job demands and job burnout, such that the positive relationship between demands and burnout will be weaker when mission valence is high.

Hypothesis 13: Mission valence will moderate the relationship between COVID-19 hindrance job demands and work engagement, such that the negative relationship between demands and engagement will be weaker when mission valence is high.

Overall, the study focused on relevant resources applicable to the demands, resources, and employee outcomes proposed in the current study. By focusing on a specific population of public sector employees and unique resources suitable for this sector, the study provided insight into the potential moderating effects of resources on the relationship between COVID-19 hindrance job demands and job burnout and work engagement.

The Reinforcement Hypothesis

The current study extended prior research on the moderating role of resources by examining the reinforcement hypothesis, which posits that multiple resources can interact to amplify the beneficial effects of resources on employee outcomes (Ross & Mirowsky, 2002). The study evaluated how one resource moderates the relationship between another resource and employee outcomes, as resources do not exist in isolation (Bakker & Demerouti, 2017). Previous research provides preliminary support for this proposition, suggesting that the interaction between skill variety and autonomy strengthens the positive relationship between resources and work engagement (Habe & Tement, 2016).

The current study examined the interaction between the personal, social, and organizational resources of public service motivation (PSM), servant leadership, and mission valence to reinforce the positive relationship between resources and work engagement and the negative relationship between resources and job burnout. Previous research has provided some initial support for this proposition. Habe and Tement (2016) found that the positive relationship between skill variety (a resource) and absorption at work (a dimension of work engagement) was stronger when autonomy was high (another resource). This finding builds on the earlier work of Karanika-Murray et al. (2009), which suggests that a multivariate analysis of the impact of job characteristics is more accurate than simply examining the effects of individual variables. More relevant to the current study, Caillier (2014) found that the positive relationship between transformational leadership (resource) and performance ratings (outcome) was stronger when mission valence (resource) was high. Stated differently, the two resources of leadership behaviors and mission valence interacted to positively affect employee performance ratings. Taken together, there is some preliminary support for the proposition that resources, while

valued in their own right, can interact to enhance the desirable relationship between resources and job burnout and work engagement.

First, the interaction between PSM and servant leadership is grounded theoretically in self-determination theory (Gagne & Deci, 2005). This is because servant leadership behaviors are uniquely suited to satisfy the intrinsic needs of an employee with high levels of PSM (Shim & Hee Park, 2019). In turn, servant leaders' ability to satisfy the intrinsic needs of their followers is believed to reinforce and further enhance subordinates' PSM (Vandenabeele, 2014). Hence,

> *Hypothesis 14a*: Public service motivation will reinforce the effect of servant leadership on work engagement, such that the positive relationship between servant leadership and work engagement will be stronger when public service motivation is high.
>
> *Hypothesis 14b*: Public service motivation will reinforce the effect of servant leadership on job burnout, such that the negative relationship between servant leadership and job burnout will be stronger when public service motivation is high.

Second, the theory of PSM suggests that individuals with greater PSM pursue meaningful public service work (Perry & Wise, 1990). Research has found PSM to be higher among public sector employees than among private sector employees (Wright & Grant, 2010). When a public sector employee with high PSM works in an organization with an attractive and compelling mission (high mission valence), there is the potential for an amplifying effect stemming from the interaction of these two resources. Thus, it was proposed that:

> *Hypothesis 15a*: Public service motivation will reinforce the effect of mission valence on work engagement, such that the positive relationship between mission valence and work engagement will be stronger when public service motivation is high.

Hypothesis 15b: Public service motivation will reinforce the effect of mission valence on job burnout, such that the negative relationship between mission valence and job burnout will be stronger when mission valence is high.

Finally, the positive interaction between servant leadership and mission valence is grounded in expectancy theory (Vroom, 1964). This is because servant leaders take the time to explain how an employee's role is vital within their organization (Eva et al., 2019). Additionally, when mission valence is high, employees place great importance on their organization's mission (Rainey & Steinbauer, 1999). Taken together, a leader who takes the time to explain how an employee's role fits into the organization's larger mission, and when that mission is important and attractive to the employee, there is the potential for an amplifying effect stemming from the interaction of these two resources. In other words, a servant leader can reinforce the benefits of mission valence as a resource. Therefore, it was predicted that:

Hypothesis 16a: Servant leadership will reinforce the effect of mission valence on work engagement, such that the positive relationship between mission valence and work engagement will be stronger when servant leadership is high.

Hypothesis 16b: Servant leadership will reinforce the effect of mission valence on job burnout, such that the negative relationship between mission valence and job burnout will be stronger when servant leadership is high.

In conclusion, the current study examined the reinforcement hypothesis to evaluate how resources interact to strengthen the relationship between resources and employee outcomes. The study tested six hypotheses related to the interactions between personal, social, and organizational resources, contributing to a better understanding of how resources can be reinforced to enhance employee outcomes.

Three-Way Interactions Between Resources and COVID-19 Hindrance Demands

In line with the rationale provided for the buffering effect of resources on the relationship between demands and employee outcomes (i.e., work engagement and job burnout) and the rationale for interaction among resources, the current study aimed to explore the potential for a three-way interaction. Specifically, the study will investigate the potential for resources to interact and moderate the relationship between COVID-19 hindrance job demands and employee outcomes of work engagement and job burnout. It is reasonable to assume that the proposed buffering effect of singular resources would be intensified when multiple resources interact. However, three-way interactions have rarely been studied in the JD-R framework (Loh et al., 2018). The scarcity of this type of research likely stems from the mixed findings of studies examining two-way interactions (Gonzalez-Mule et al., 2020). Given the previously discussed reasons, including the focus on hindrance demands and industry-specific resources, examining a three-way interaction is warranted in the current study. In the absence of sufficient rationale for hypotheses, the following research questions were proposed:

Research Question 1: Does public service motivation moderate the two-way interaction between a) servant leadership and COVID-19 hindrance job demands on work engagement and job burnout, and b) mission valence and COVID-19 hindrance job demands on work engagement and job burnout?

Research Question 2: Does servant leadership moderate the two-way interaction between a) public service motivation and COVID-19 hindrance job demands on work engagement and job burnout, and b) mission valence and COVID-19 hindrance job demands on work engagement and job burnout?

Research Question 3: Does mission valence moderate the two-way interaction between a) public service motivation and COVID-19 hindrance job demands on work engagement and job burnout, and b) servant leadership and COVID-19 hindrance job demands on work engagement and job burnout?

CHAPTER VI

METHOD

Participants

The samples used in the current study consisted of 206 public sector employees who responded to a survey at Time 1 (Time 1 sample) and 130 public sector employees with matched responses across a 30-day time lag at Time 2 (Merged Time 2 sample). The Merged Time 2 sample had an average age of 42 years (M = 42.38, SD = 10.91), was primarily female (60.8%), and predominantly white (75.0%). The Time 1 sample was similar, with an average age of 43 years (M = 43.24, SD = 11.18), primarily female (60.0%), and predominantly white (76.2%). Most participants in both the Time 1 and Time 2 samples were married (Time 1 = 69.8%; Time 2 = 72.5%), and a plurality of participants did not have any children or dependents living with them (Time 1 = 45.9%; Time 2 = 45.8%). Most participants in both samples had earned a master's degree (Time 1 = 42.0%; Time 2 = 45.8%). Complete participant demographic data describing the two samples at each time point is presented in Table 1.

Participants also shared basic information about their work situation. On average, participants had been with their current employer for approximately nine years (Time 1, M = 9.50, SD = 9.12; Time 2, M = 8.65, SD = 8.93), and a majority were full-time employees working 35 or more hours per week (Time 1, n = 164 (59%); Time 2, n = 106 (81.5%)). Participants were employed by public sector entities from over 20 states, with Virginia as the most represented state (Time 1 = 27.8%; Time 2 = 35.8%) followed by New York (Time 1 = 20.3%; Time 2 = 17.5%). Although all participants were employed in the public sector, they differed in their type of employment. Most participants in both samples were employed by local government entities (Time 1 = 52.6%; Time 2 = 54.5%), followed by public school employees

(Time 1 = 19.9%; Time 2 = 18.7%). Complete participant demographic data describing the employment type and work situation of participants in both samples at each time point is presented in Table 2.

Table 1

Participant Demographic Data for Time 1 and Time 2 Samples

Participant Demographic Data	Time 1 *n* = 206	Time 2 *n* = 130
Age (*m, sd)*	43.24 (11.18)	42.64 (11.27)
Gender		
Male	81 (39.5%)	52 (40.0%)
Female	124 (60.5%)	78 (60.0%)
Other	0 (0.0%)	0 (0.0%)
Prefer not to say	0 (0.0%)	0 (0.0%)
Race		
Asian	5 (2.4%)	5 (3.8%)
American Indian or Alaska Native	0 (0.0%)	0 (0.0%)
Black or African-American	26 (12.7%)	15 (11.5%)
Native Hawaiian or Other Pacific Islander	3 (1.5%)	2 (1.5%)
White	160 (78%)	99 (76.2%)
Other, please specify	4 (2%)	3 (2.3%)
Two or more races / ethnicities	2 (1.0%)	2 (1.5%)
Not certain	1 (0.5%)	1 (0.8%)
Prefer not to say	4 (2.0%)	3 (2.3%)
Education		
High school graduate	6 (2.9%)	2 (1.5%)
Some college	20 (9.8%)	13 (10.0%)
Associate	11 (5.4%)	5 (3.8%)
Bachelor	57 (27.8%)	36 (27.7%)
Master	86 (42.0%)	58 (44.6%)
PhD	16 (7.8%)	10 (7.7%)
Graduate/Professional degree (MD, JD)	9 (4.4%)	6 (4.6%)
Marital Status		
Single, living alone	29 (14.1%)	19 (14.6%)
Single, living with a partner	18 (8.8%)	8 (6.2%)
Married	143 (69.8%)	93 (71.5%)
Divorced	13 (6.3%)	9 (6.9%)
Widowed	2 (1.0%)	1 (0.8%)
Number of Children or Dependents in Home (*m, sd)*	1.03 (1.13)	0.98 (1.07)

Table 2

Work-Related Demographic Data for Time 1 and Time 2 Samples

Work-Related Demographic Data	Time 1 Sample *n* = 206	Time 2 Sample *n* = 130
Type of Public Sector Employment		
I am employed by a local government (County, Municipality, City, Town, District)	103 (52.6%)	67 (54.5%)
I am employed by a state government	13 (6.6%)	9 (7.3%)
I am employed by the Federal Government	25 (12.8%)	16 (13.0%)
I am a public-school employee	39 (19.9%)	23 (18.7%)
I am a government contractor	5 (2.6%)	2 (1.6%)
Other (please describe your current employment)	11 (5.6%)	6 (4.9%)
Tenure (years) with Current Employer (*M, sd*)	9.50 (9.12)	8.65 (8.93)
Employee Status before COVID-19 (*n*, %)		
Part-Time (Less than 35 hours per week)	36 (12.9%)	21 (16.2%)
Full-Time (35 or more hours per week)	164 (59.0%)	106 (81.5%)
Other (i.e., alternate Work Schedule)	2 (0.7%)	1 (0.8%)
Typical work situation before COVID-19		
I normally did all of my work in the office (no telework)	138 (67.0%)	87 (66.9%)
I normally did all of my work in the field (no telework)	19 (9.2%)	11 (8.5%)
I normally did the majority of my work in the office/field (teleworked about 1-day a week)	22 (10.7%)	15 (11.5%)
I normally split my time between home and office/field (teleworked about 2-3 days a week)	21 (10.2%)	13 (10.0%)
I normally did the majority of my work from home (teleworked about 4 days a week)	1 (0.5%)	1 (0.8%)
I normally did all of my work from home (teleworked full-time)	5 (2.4%)	3 (2.3%)
I was furloughed (not working)	0 (0.0%)	0 (0.0%)
Typical work situation currently		
I am doing all of my work in the office (no telework)	42 (20.8%)	25 (19.5%)
I am doing all of my work in the field (no telework)	16 (7.9%)	9 (7.0%)
I am doing the majority of my work in the office/field (telework about 1-day a week)	18 (8.9%)	12 (9.4%)
I am splitting my time between home and office/field (telework about 2-3 days a week)	14 (6.9%)	8 (6.3%)
I am doing the majority of my work from home (telework about 4 days a week)	10 (5.0%)	6 (4.7%)
I am doing all of my work from home (telework full-time)	102 (50.5%)	68 (53.1%)
I am not currently working	0 (0.0%)	0 (0.0%)
Employee Status Currently (*n, %*)		
Part-Time (Less than 35 hours per week)	50 (18.0%)	25 (19.2%)
Full-Time (35 or more hours per week)	148 (53.2%)	102 (78.5%)
Alternate Work Schedule	2 (0.7%)	0 (0%)

Procedure

Data for this study were collected by the author during the COVID-19 pandemic from April to July 2020. Specifically, Time 1 surveys were distributed between April 25th, 2020, and May 30th, 2020, and Time 2 surveys were distributed between May 25th, 2020, and June 29th, 2020. Respondents who completed the survey at Time 1 were emailed a link to the Time 2 survey 30 days later.

Determining an appropriate time lag between measurements in longitudinal research can be challenging due to the lack of theoretical justification for a specific timeframe (Spector & Pindek, 2016). Consequently, most longitudinal research, especially occupational health research examining stressor-strain relationships, adopts arbitrary time lags or fails to state the reason for the time lag explicitly (Brusso et al., 2014). Ployhart and Ward (2011) suggest several practical recommendations in the absence of theoretical guidance, including considering the phenomenon being investigated, consulting with subject matter experts (SMEs), and referencing previous literature.

The current study chose a 30-day time lag for several reasons. First, a 30-day time lag was considered sufficient for respondents to experience the COVID-19 hindrance demands of interest in the study, based on data gathered during interviews and focus groups with public sector employees as part of the qualitative analysis, which suggested that COVID-19 hindrance demands were experienced on an almost daily basis. Previous research examining the relationship between job demands and employee outcomes (burnout and work engagement) also adopted a 30-day time lag (Bass, 2017). Finally, a 30-day time lag addresses calls for more "shortitudinal studies" in organizational research, which adopt shorter time lags (i.e., 30 days) compared to the more common three-month lag (Dormann & Griffin, 2015). The input from

SMEs and rationale from previous research justified the 30-day time lag between measurements in this study.

The Time 1 and Time 2 surveys were identical, containing 113 items. To be included in the study, participants had to respond affirmatively to a question asking if they were a public sector employee, which was defined as anyone who is "1) Employed by a local, state, or federal government; 2) A public school teacher; or 3) Employed by an organization contracted by a local, state, or federal government." Prior to data collection, IRB approval was obtained.

The study used a non-probability sampling method involving convenience and snowball sampling, an efficient and cost-effective way to sample hard-to-reach populations (Naderifar et al., 2017). Participants were recruited for the study through social media posts (e.g., LinkedIn, Twitter), direct emails to public sector employees, and contacting organizers of professional public sector employee associations. During the recruitment process, potential participants were encouraged to share the survey link on their social media platforms (e.g., LinkedIn page) and with other public sector employees directly. Participants who completed the surveys at Time 1 and Time 2 were entered into a raffle to win one of six $25.00 Amazon gift cards. The survey took approximately 15 minutes for participants to complete.

A total of 206 participants completed the survey during the initial survey period. After completing the Time 1 survey, participants were given the opportunity to enter an anonymous raffle for one of six $25 Amazon gift cards. They were also asked if they could be contacted for a follow-up survey in 30 days. The Time 2 follow-up surveys were sent 30 days after the Time 1 survey was received, with reminder emails sent 35 and 40 days after the Time 1 survey was completed. A total of 146 participants completed the Time 2 survey, but 16 responses could not be matched to a Time 1 survey, resulting in 130 matched surveys and an attrition rate of 36.9%.

The surveys were predominantly matched using a unique four-character ID generated by participant responses to four questions, following recommendations by Kearney and colleagues (1984). These questions included the first letter of the participant's biological mother's first name, the first letter of the participant's biological father's first name, the number of siblings, and the first letter of the name of the high school the participant graduated from (with an option to use 9 if not applicable). Ninety-three of the 130 matched responses were matched based on identical unique four-character IDs. Additional analyses were conducted to match the other 37 pairs using location data collected by Qualtrics online survey platform (e.g., IP Address, longitude, and latitude). Some responses were matched based solely on IP address, longitude, and latitude of respondents, a combination of the state where survey completion was recorded and matching ID characters, and partial matching ID characters. While efforts were made to link all responses from Time 1 to Time 2, 16 responses were removed due to an inability to link to Time 1 surveys. All Time 2 respondents likely participated in the Time 1 survey since they were contacted directly via the email address provided at Time 1.

Measures

Measures of core study variables were included at both time points. Demographic variables were measured only at Time 1, with an option for participants to update their demographic data (i.e., work status) if it changed in the 30 days between Time 1 and Time 2 surveys. All measures with instructions and response scales are included in the Appendix.

Work Engagement

Work engagement was measured using Schaufeli et al.'s (2017) three-item measure of work engagement. Each item measured one of the three facets of work engagement (vigor, dedication, and absorption). Schaufeli and colleagues found that the three-item measure of work

engagement shared 86 - 92% of its variance with the longer nine-item measure. The researchers concluded that the three-item short engagement measure was a reliable and valid indicator of work engagement and a good alternative to the longer nine-item version. The three items were: 1) "I feel bursting with energy while working," 2) "I am enthusiastic about my job," and 3) "I am immersed in my work." Participants rated all three items on a 5-point agreement scale ranging from *strongly disagree* (1) to *strongly agree* (5). Cronbach's alpha reliability for this measure at Time 1 was .72, and at Time 2 was .75.

Job Burnout

Job burnout was measured using three items from the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981) assessing the burnout dimension of emotional exhaustion, defined as "feelings of being emotionally overextended and depleted of one's emotional resources" (Maslach, 1993, p. 20-21). This dimension of burnout is the basic individual stress dimension of burnout and the most obvious manifestation of burnout (Maslach et al., 2001). The three items were: 1) "I feel emotionally drained from my work," 2) "I feel used up at the end of the workday," and 3) "I feel burned out from my work." Participants rated all three items on a 5-point agreement scale ranging from *strongly disagree* (1) to *strongly agree* (5). Cronbach's alpha reliability for this measure at Time 1 was .90, and at Time 2 was .89.

COVID-19 Hindrance Job Demands

The current study measured COVID-19 hindrance job demands using 21 items. These demands were derived from individual interviews with public sector employees and a focus group. The interviews and focus group were structured using three pre-written questions that explored how the COVID-19 pandemic has affected work, the challenges and difficulties faced, and what is needed to be satisfied and productive at work during the pandemic. Participants were

asked to rate how often they found it difficult or impossible to do their job because of each COVID-19 hindrance demand on a 5-point scale ranging from *less than once per month or never* (1) to *several times per day* (5). The approach to measuring job demands was adapted from Spector and Jex's (1998) organizational constraints scale. Cronbach's alpha reliability for this measure at Time 1 was .90.

Public Service Motivation

In the present study, the personal resource of public service motivation (PSM) was assessed using the 5-item global PSM measure developed by Wright and colleagues (2013). Previous research has demonstrated the validity of global measures of PSM (Homberg & Costello, 2019), as they can effectively capture an individual's overall level of PSM with just a few items (Wright et al., 2013). The current study focused primarily on global PSM as a personal resource rather than its specific facets, so the global measure was deemed appropriate. Participants responded to items such as "meaningful public service is very important to me" on a 5-point agreement scale ranging from *strongly disagree* (1) to *strongly agree* (5). Cronbach's alpha reliability for this measure at Time 1 was .78.

Servant Leadership

The social resource of servant leadership (SL) was evaluated using the 7-item short form of the SL-28 developed by Liden and colleagues (2015). Three studies of six samples found that correlations between the SL-7 and SL-28 scales ranged from .78 to .97 (Liden et al., 2015), indicating strong convergent validity. Furthermore, Liden et al. reported internal consistency reliabilities above .80 across all samples. Participants rated items such as "My supervisor puts my best interests ahead of his/her own" on a 5-point agreement scale ranging from *strongly*

disagree (1) to *strongly agree* (5). Cronbach's alpha reliability for this measure at Time 1 was .90.

Mission Valence

Two items adapted from Wright's (2007) three-item measure of mission valence were utilized to measure the organizational resource of mission valence. Wright and colleagues previously used these same two items (2012). Participants were asked to rate their agreement with statements such as "This organization provides valuable public services" and "I believe that the priorities of this organization are quite important" on a 5-point agreement scale ranging from *strongly disagree* (1) to *strongly agree* (5). Wright and colleagues reported a Cronbach's alpha of .69 for this two-item measure of mission valence. Cronbach's alpha reliability for this measure at Time 1 was .76.

Control Variables

The current study included neuroticism as a covariate based on its significant correlation with both outcome variables. No other demographic variables were found to be significantly related to either outcome variable. Therefore, no other covariates were statistically controlled during hypothesis testing.

Neuroticism. Neuroticism has been found to predict adverse health outcomes and to account for significant variance in job burnout beyond the effects of work stress (Bakker et al., 2010; Goddard et al., 2004). There is also evidence that individuals with higher neuroticism more quickly regain their autonomy at work compared with those with lower neuroticism during the COVID-19 pandemic (Anicich et al., 2020). Participants in the current study responded to four items measuring neuroticism from Donnellan et al.'s (2006) mini-IPIP scales. Cronbach's alpha reliability for this measure at Time 1 was .70. Neuroticism measured at Time 1 was

significantly correlated with work engagement measured at Time 2 (r = -.20) and job burnout measured at Time 2 (r = .60).

Attention Checks

Two attention check items were included to identify potential careless responding in the study. Specifically, these two items read, “For data quality purposes, please select 'Strongly Disagree' for this item” and “For data quality purposes, please select 'Strongly Agree' for this item.” The rating scale for both attention check items ranged from Strongly Disagree (1) to Strongly Agree (5).

CHAPTER VII

RESULTS

Preliminary Analysis

Time 1 Sample Inclusion Criteria

Participants were asked, "Are you currently a public sector employee?" with the response options: *Yes*, *No*, *I'm currently furloughed*, *I've recently been laid off*, and *Not sure (please explain)*. A total of 211 participants responded, with 189 participants self-identifying as public sector employees. Participants who indicated they were not a public sector employee (n = 12), were currently furloughed (n = 4), or had recently been laid off (n = 2) were removed from the sample. Qualitative data from participants who indicated they were unsure if they were currently a public sector employee (n = 4) were examined. It was determined that these responses did not fit the category of public sector employee (e.g., catholic schoolteacher).

Time 1 Sample Attention Checks

The two attention check items from the Time 1 dataset were examined to identify potential careless responding. Of the 189 participants who met the study's inclusion criteria, 143 (76%) passed both attention checks. Additionally, 36 (19%) participants passed one of the two attention checks. These responses were examined further for evidence of potential careless responding. The remaining 10 participants, who did not pass either attention check, were removed from the sample.

Of the 36 participants who passed at least one of the two attention checks, responses from 31 (86%) participants did not reveal any evidence of careless responding and were retained. Five cases were removed; four showed evidence of careless responding, and one completed the survey

in less than three minutes (median completion time was approximately 15 minutes). The resultant sample consisted of 174 respondents.

Time 1 Sample Outlier Analysis

Responses in the updated Time 1 sample (n = 174) were examined for incorrect values and outliers. Following the recommendations from Tabachnick and Fidell (2018), items measuring study variables were converted into Z-scores, and values +/- 3.29 were flagged as potential univariate outliers. Item-level outlier analysis was conducted because the purpose of using the Time 1 sample was to provide psychometric justification for the creation of composite variables for hypothesis testing with the Time 2 Merged sample.

Within the Time 1 dataset, 19 cases had potential outliers, totaling 25 potential outliers as identified by Z-scores more extreme than +/- 3.29. Of the 19 cases, 16 had one potential outlier, two had two potential outliers, and one had five potential outliers. A closer review of the one case with five potential outliers revealed that all five potential outliers were in response to each of the five PSM items. In other words, this particular respondent responded '*strongly disagree*' to each PSM item, resulting in z-scores for each response flagged as an outlier. Although this participant self-identified as a public sector employee, based on their responses to the PSM items, this respondent was either so unique and different from the rest of the sample population, or the responses were careless (since all responses were '1'). Nevertheless, the decision was made to remove this respondent from analysis.

There were two other cases that each had two responses flagged as potential outliers. One of these cases had two potential outliers on PSM items, whereas the other had two potential outliers on demand items. Both respondents successfully responded to both attention check items, making their responses unlikely to be the result of carelessness. The remaining 16 cases

had a single response flagged as a potential outlier. Of these 16 cases, 11 of them passed both attention checks, and five passed one of the two. Since these respondents are part of the intended population of public sector employees and there is insufficient rationale to remove them, the decision was made to retain these responses. In summary, only the one case with five potential outliers on each of the five PSM items was removed. This case also showed some evidence of careless responding.

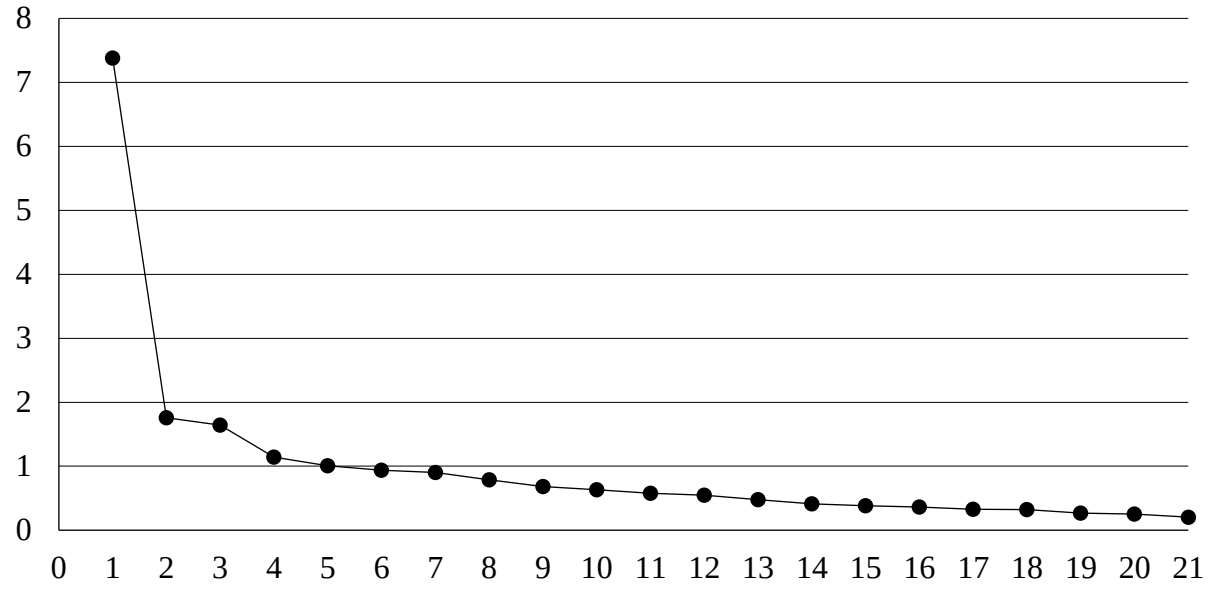
Exploratory and Confirmatory Factor Analyses

A series of exploratory (EFA) and confirmatory (CFA) factor analyses using the updated Time 1 Sample (n = 173) were conducted in Mplus 8.0 (Muthén & Muthén, 1998) to test the fit of proposed factor structures and provide psychometric justification for the creation of composite variables.

COVID-19 Hindrance Job Demands. An EFA with maximum likelihood (ML) estimation and geomin rotation was conducted to examine the factor structure of the 21 items measuring COVID-19 hindrance job demands. The scree plot depicting the eigenvalues resulting from the EFA suggested that a 1-factor solution was the best-fitting model (Figure 2). While five factors had eigenvalues greater than one, the first factor had an eigenvalue of 7.38, explaining 35.14% of the variance of the 21 demand items. Additionally, all items significantly loaded onto the first factor, with the lowest factor loading being 0.30. Factors two, three, four, and five each explained less than 10% of the variance of the demand items. Furthermore, additional demand factors lost their theoretical and practical meaningfulness, thus obfuscating the interpretation of hypothesis tests. Finally, the internal consistency reliability of the 21-item measure, as assessed by Cronbach's Alpha, was .90. As a result, the decision was made to proceed with a 1-factor measure of COVID-19 hindrance job demands that included all 21 items.

Figure 2

Scree Plot of Eigenvalues from Exploratory Factor Analysis on COVID-19 Hindrance Demand Items



Personal, Social, and Organizational Resources. A CFA was conducted on the 15 resource items (5 items for PSM, 7 items for Servant Leadership, and 3 items for Mission Valence) in the current study to provide evidence of discriminant validity. Data fit to the expected three-factor model was compared to data fit to a one-factor and two-factor models. In the 3-factor model, items served as indicators of each of the three resource variables of PSM, servant leadership, and mission valence. In the two-factor model, the PSM and mission valence items were combined to load on a single factor based on a factor correlation of .44. In the one-factor model, all items loaded on a single resource factor. Model fit statistics for the three models and results of the delta chi-square significance tests, as presented in Table 3, support the three-factor model.

Table 3

Results of Confirmatory Factor Analyses of Personal, Social, and Organizational Resources Scales

	χ^2	*df*	CFI	RMSEA (90% CI)	SRMR	$\Delta\chi^2$	Δdf
Hypothesized 3-Factor Model	142.716	74	.931	.073 (.055 - .091)	.057	-58.304*	2
2-Factor Model	201.020	76	.874	.098 (.081 - .114)	.076	-195.365*	1
1-Factor Model	396.385	77	.679	.155 (.140 - .171)	.135		

*Statistically significant at .05.

Employee Outcomes. A CFA was conducted on the employee outcome variables of work engagement and job burnout. Given the high correlation between these constructs (Bakker & Demerouti, 2007), the fit of the data to a two-factor model (work engagement and burnout) was evaluated against the fit of the data to a one-factor model. Model fit statistics for both models and results of the delta chi-square significance test, as presented in Table 4, provide support for the two-factor model. Simple models like the one tested here, with limited degrees of freedom and smaller sample size, tend to have higher RMSEA and SRMR values (Taasoobshirazi & Wang, 2016).

Table 4

Results of Confirmatory Factor Analysis Testing among Employee Outcome Items

	χ^2	*df*	CFI	RMSEA (90% CI)	SRMR	$\Delta\chi^2$	Δdf
Hypothesized 2-Factor Model	35.436	8	.944	.141 (.096 - .190)	.091	-101.712*	1
1-Factor Model	137.148	9	.739	.287 (.246 - .330)	.147		

*Statistically significant at .05.

Time 2 Matched Sample Attention Checks

On the Time 2 survey, participants responded to two attention check items as they did previously on the Time 1 survey. Of the 120 participants in the Time 2 matched sample who met this study's inclusion criteria, 76 (63%) responded correctly to both attention check items. An additional 35 participants (29%) responded correctly to one of two attention check items. By the procedure outlined with the Time 1 sample, these responses were examined further for evidence of careless responding.

Of these 35 participants, 30 passed at least one attention check at each time point and failed the second one by responding with the other extreme response (i.e., instructed to select strongly agree and selected strongly disagree). This left five respondents who failed at least one attention check at both time points by responding with a nonextreme answer. While blatant evidence of careless responding was absent, there was no logical rationale for why respondents would have selected a '2', '3', or '4' when instructed to select an extreme response (i.e., '1' or '5'). Thus, in an effort for high-quality data, the decision was made to remove these five

participants. The final Time 2 matched sample included 106 respondents, 72% passed both attention checks (n = 76), and 28% passed one of two attention checks (n = 30).

Time 2 Matched Sample Outlier Analysis

Composite variables were created from individual items based on EFA and CFA results and examined for incorrect values and outliers. Following the recommendations from Tabachnick and Fidell (2018), study composite variables were converted into Z-scores, and values +/- 3.29 were flagged as potential outliers. Five cases had potential outliers with z-scores more extreme than +/- 3.29, and two of these cases had potential outliers on two variables (a total of 7 outlier responses). A review of the cases with potential outliers showed no evidence of blatant careless responding. Since these cases are part of the intended population of public sector employees and sufficiently responded to attention check items, the decision was made to keep all cases. Per Tabachnick and Fidell's (2018) recommendations, the impact of potential outliers will be mitigated by conducting hypothesis testing with and without transformed variables as determined by measures of normal distribution (detailed below).

The final merged dataset used for hypothesis testing consisted of 106 public sector employees who responded to two surveys, approximately 30 days apart from April to July of 2020, during the COVID-19 pandemic.

Time 2 Matched Sample Skewness and Kurtosis

The skewness and kurtosis values for composite variables used for hypothesis testing in the merged dataset were examined, with values +/- 1.5 indicating potential nonnormality (Tabachnick & Fidell, 2018). None of the study variables had a skewness value more extreme than +/- 1.5. However, three variables had skewness with values more extreme than +/- 1.0 (Demands Time 1, PSM Time 1, MV Time 1). Additionally, one variable had a kurtosis value

greater than 3 (PSM Time 1; 4.51), indicating a leptokurtic distribution with a higher peak and longer tails than a normal distribution.

According to Tabachnick and Fidell (2018), data transformations are not universally recommended, mainly because data transformation can make it difficult to interpret results. As a result, the decision was made to run all analyses with and without data transformation to detect if patterns of significance differ with transformed data. Specifically, the three aforementioned study variables with moderate skewness were transformed via square root per recommendations from Tabachnick and Fidell (2018).

Attrition Effects

To examine potential attrition effects that may bias results, the Time 2 merged sample of 106 participants was compared to the 68 participants who met inclusion criteria and were used in the Time 1 analysis but did not respond to the Time 2 follow-up survey 30 days later. These two samples were compared on ten demographic variables and six study variables. For the three continuous demographic variables (tenure, age, and number of children) and six study variables, independent samples t-tests were conducted (Table 5). For the remaining seven categorical demographic variables (e.g., current work status, race, education), chi-squared test of independence was conducted (Table 6).

Table 5

Attrition Effect Testing for Continuous Variables

	Merged Sample			Attrition Sample			Significance Testing	
	N	Mean	SD	N	Mean	SD	*t*	df
Tenure	106	8.14	8.69	66	12.30	1.20	-2.84*	126.31
Age	106	41.82	10.58	65	45.37	1.38	-2.09*	169
Number of Children	106	0.98	1.06	65	1.11	1.13	-0.738	169
Covid-19 Hindrance Demands	106	1.96	0.65	67	1.90	0.72	0.31	171
PSM	106	4.22	0.64	68	4.19	0.59	0.38	172
Servant Leadership	106	3.57	0.96	68	4.44	0.98	0.20	172
Mission Valence	106	4.40	0.67	67	4.39	0.72	0.36	171
Work Engagement	106	3.29	0.83	68	3.26	0.80	0.41	172
Job Burnout	106	3.20	1.10	68	3.24	1.12	0.42	172

Table 6

Attrition Effect Testing for Categorical Demographic Variables

	Pearson Chi-Square	df	Sig.	Merged Sample N	Attrition Sample N
Employment Type	1.46	5	.918	106	68
Local Government				61	38
State Government				6	4
Federal Government				12	8
Public-School Employee				22	12
Government Contractor				2	3
Other				3	3
Hours worked before COVID-19	0.23	2	.891	106	68
Part-Time (Less than 35 hours per week)				15	8
Full-Time (35 or more hours per week)				90	56
Alternate Work Schedule				1	1
Hours worked currently	0.20	2	.906	105	66
Part-Time (Less than 35 hours per week)				22	15
Full-Time (35 or more hours per week)				82	50
Alternate Work Schedule				1	1
Highest level of education	6.76	6	.344	106	65
High school graduate				0	3
Some college				9	5
Associate				3	3
Bachelor				29	20
Master				51	26
PhD				8	6
Graduate / Professional Degree (MD, JD)				6	2
Gender	0.01	1	.924	106	65
Male				40	25
Female				66	40
Race	4.58	6	.599	106	65
Asian				3	0
Black or African American				14	10
Native Hawaiian or Other Pacific Islander				1	0
White				80	53
Other				3	1
Two or more races / ethnicities				2	0
Prefer not to say				3	1
Marital Status	1.55	3	.671	106	65
Single, living alone				18	8
Single, living with a partner				8	7
Married				76	46
Divorced				4	4

The only significant differences between the sample of 106 participants in the final merged dataset and 68 participants who dropped out of the study after the Time 1 survey were the demographic variables of age and tenure. The attrition sample of 68 participants was significantly older (45.37 years old vs. 41.82 years old) and more tenured (12.30 years of experience vs. 8.14 years of experience). None of the chi-squared tests of independence were significant for the seven categorical variables.

Hypothesis-Testing

Correlational Results

Means, standard deviations, internal consistency reliabilities, and correlations for all study variables included in hypothesis testing are presented in Table 7. Hypothesis 1, which predicted that job burnout (Time 2) would be negatively related to work engagement (Time 2), was supported (r = -.38, p < .01). COVID-19 hindrance job demands (Time 1) were significantly related to job burnout (Time 2; r = .31, p < .01) but not work engagement (Time 2), in support of Hypothesis 2 but not Hypothesis 3. The personal resource of public service motivation (PSM; Time 1) and social resource of servant leadership (Time 1) were not significantly related to work engagement (Time 2) or job burnout (Time 2); thus, Hypotheses 5a, 5b, 6a, and 6b were not supported. The organizational resource mission valence (Time 1) was significantly related to work engagement (Time 2; r = .39, p < .01) but not job burnout (Time 2), in support of Hypothesis 5c but not Hypothesis 6c.

Table 7

Means, Standard Deviations, Reliabilities, and Correlations Among Studied Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. COVID-19 Hindrance Job Demands (T1)	1.95	0.65	(.90)								
2. Public Service Motivation (T1)	4.21	0.65	.04	(.78)							
3. Servant Leadership (T1)	3.55	0.98	-.37**	.04	(.90)						
4. Mission Valence (T1)	4.38	0.68	-.38**	.28**	.24*	(.76)					
5. Work Engagement (T1)	3.30	0.82	-.20*	.17	.24*	.35**	(.72)				
6. Job Burnout (T1)	3.21	1.09	.37**	-.03	-.18	-.13	-.25**	(.90)			
7. Neuroticism (T1)	2.64	0.75	.23*	-.28**	-.05	-.36**	-.22*	.26**	(.70)		
8. Work Engagement (T2)	3.17	0.91	-.16	.12	.11	.29**	.54**	-.20*	-.24*	(.75)	
9. Job Burnout (T2)	3.39	1.09	.31**	-.01	-.10	-.19	-.23*	.60**	.28**	-.38**	(.89)

Note. $N = 106$. T1 = Time 1; T2 = Time 2. Cronbach's alphas are presented in parentheses along the diagonal.
*$p < .05$. **$p < .01$

Path Analyses

Model identification was examined to determine if there were enough degrees of freedom to estimate model parameters (Clavel, 2014). Both the direct and indirect effects model and the interaction models were just identified, meaning the models fit the data perfectly. As a result, further examination of model fit was not necessary (Klem, 1995).

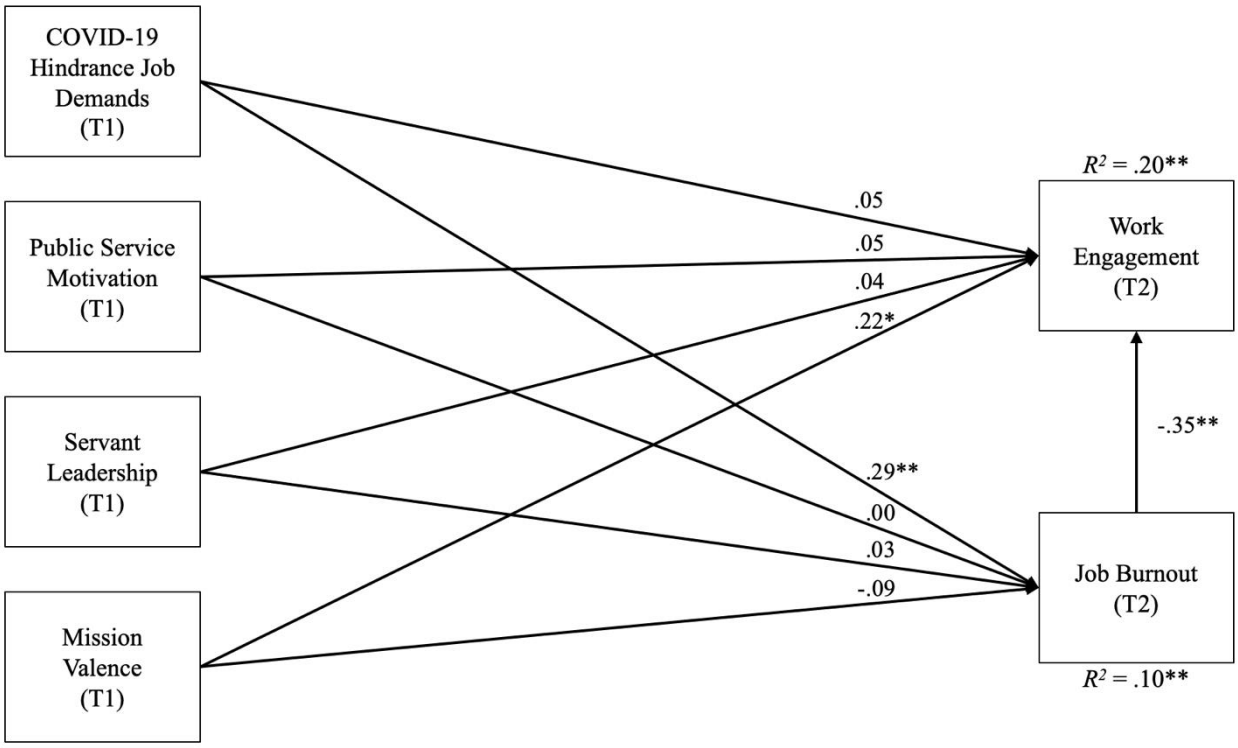
Given the small sample size and concerns for statistical power, each hypothesis was assessed with progressively stringent tests (Cohen, 1992). First, path analyses were conducted using only the focal study variables without any covariates included in the models. Second, path analyses were conducted with neuroticism added as a covariate in the models. Finally, path analyses were conducted with neuroticism and the Time 1 dependent variable(s) as covariates. Additionally, all analyses were also conducted with the study variables Demands (Time 1), PSM (Time 1), and Mission Valence (Time 1) transformed (via square root transformation) to normalize the moderately skewed distributions (Tabachnick & Fidell, 2018).

Direct and Indirect Effects. Results of the path analysis testing Hypotheses 1-7 without covariates are presented in Figure 3. Job burnout was significantly related to work engagement ($\beta = -.35$, $p < .01$), providing support for Hypothesis 1. COVID-19 hindrance demands were significantly related to job burnout ($\beta = .29$, $p < .01$) but not related to work engagement ($\beta = .05$, $p = .64$). Thus, Hypothesis 2 was supported, but Hypothesis 3 was not. Additionally, COVID-19 hindrance job demands indirectly affected work engagement through job burnout ($\beta = -.10$, $p < .05$), in support of Hypothesis 4. Hypotheses 5 and 6 predicted that resources would be positively related to work engagement and negatively related to job burnout. First, public service motivation was not significantly related to work engagement ($\beta = .05$, $p = .58$) or job burnout ($\beta = .00$, $p = .97$). Second, servant leadership was also not significantly related to work

engagement (β = .04, p = .71) or job burnout (β = .03, p = .78). Finally, mission valence was significantly related to work engagement (β = .22, p < .05) but not to job burnout (β = -.09, p = .40). Taken together, these findings indicated partial support for Hypothesis 5 and no support for Hypothesis 6. Additionally, Hypothesis 7 predicted an indirect effect of resources on work engagement through job burnout. However, PSM (β = -.00, p = .97), servant leadership (β = -.01, p = .79), and mission valence (β = .03, p = .44) did not have a significant indirect effect on work engagement through job burnout.

Figure 3

Results for Direct and Indirect Effects



Note. Standardized estimates are displayed. T1 = Time 1; T2 = Time 2.

Path analysis models were also tested with neuroticism as a covariate. Results showed the same pattern of significant direct effects, see Table 8. Job burnout was significantly related to work engagement (β = -.34, $p < .01$). Additionally, COVID-19 hindrance demands were still significantly related to job burnout (β = .25, $p < .05$) but not to work engagement. None of the resources were significantly related to job burnout. However, mission valence was still the sole resource significantly related to engagement (β = .20, $p < .05$). The covariate neuroticism was significantly related to job burnout (β = .23, $p < .05$) but not to work engagement (β = -0.08, $p = .43$). Finally, the indirect effect of COVID-19 hindrance demands on work engagement through job burnout was no longer significant with neuroticism as a covariate (β = -.08, $p = .07$).

When controlling for work engagement and job burnout measured at Time 1, the pattern of significant results found previously changed substantively, see Table 8. The only direct effect that remained significant after controlling for the dependent variables at Time 1 was that of job burnout being significantly related to work engagement (β = -.27, $p < .05$). Demands, resources, and neuroticism were not significantly related to either job burnout or work engagement. As expected, the autoregressive coefficients of work engagement and job burnout across Times 1 and 2 were strong and significant (work engagement, β = .46, $p < .01$; job burnout, β = .55, $p < .01$).

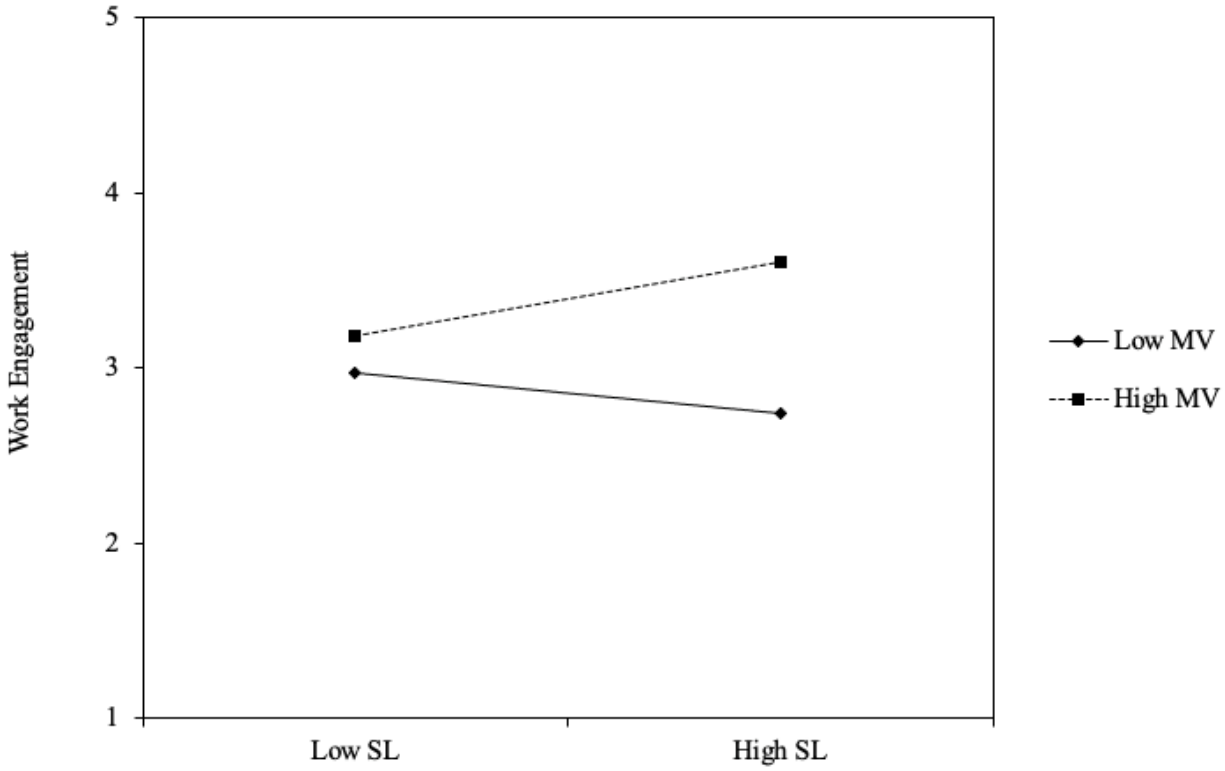
Two-Way Interactions. Due to their large number, interaction effects were tested separately (e.g., Bakker et al., 2005). Hypotheses 8-13 proposed a "buffering" effect in which resources would mitigate the detrimental effects of COVID-19 hindrance demands on work engagement and job burnout. A statistically significant direct effect in the hypothesized direction of demands on work engagement and job burnout was a prerequisite for testing resources' "buffering" effects. Since demands only had a statistically significant direct effect on job burnout

and not work engagement, only the moderating effects of resources on the relationship between demands and job burnout were examined. Results showed that neither PSM (β = .33, *p* = .65), servant leadership (β = .34, *p* = .30), nor mission valence (β = .25, *p* = .60) significantly moderated the relationship between COVID-19 hindrance job demands and job burnout. Thus, Hypotheses 11-13 were not supported.

Hypotheses 14-16 predicted that resources would "reinforce" each other, such that one resource would moderate the relationship of another resource with work engagement and job burnout. Public service motivation did not significantly moderate the relationship between servant leadership and work engagement (β = -.18, *p* = .80) or job burnout (β = .65, *p* = .36), nor the relationship between mission valence and work engagement (β = -.98, *p* = .31) or job burnout (β = .77, *p* = .38). Thus, Hypotheses 14 and 15 were not supported. Mission valence significantly moderated the relationship of servant leadership with work engagement (β = 1.45, *p* < .05) but not with job burnout (β = -.06, *p* = .66), in partial support of Hypothesis 16. When the two-way interactions were examined with neuroticism as a covariate and with neuroticism and Time 1 dependent variables as covariates, the same pattern of results was found (see Table 8). A plot depicting the significant two-way interaction effect is presented in Figure 4. The results of the simple slope analysis was not significant at low (*t* = -.01, *p* = .99) or high (*t* = .01, *p* = .99) levels of mission valence.

Figure 4

Plot of the Significant Two-Way Interaction Effect between Servant Leadership and Mission Valence on Work Engagement.



Note. MV = Mission Valence, SL = Servant Leadership.

Two-way interactions were also examined using the larger Time 1 sample (N = 173). None of the proposed buffering nor reinforcement effects were statistically significant, with and without including covariates. Interestingly, the significant interaction between mission valence and servant leadership in the Time 2 merged sample was not observed in the larger Time 1 sample.

Three-Way Interactions. Three research questions were proposed to explore the potential three-way interactions between two resources and demands. A total of six three-way

interactions were explored (3 interactions each for work engagement and job burnout). None of the three-way interactions were statistically significant with and without covariates, see Table 8. Three-way interactions were also examined using the Time 1 sample (N = 173). None of the interactions were statistically significant, with and without including covariates.

Analyses with Transformed Data. All the analyses were also conducted with transformed study variables. Specifically, COVID-19 hindrance job demands (Time 1), PSM (Time 1), and Mission Valence (Time 1) were moderately skewed with skewness values greater than 1 but less than 1.5 before transformation. Since skewness was not extreme (> 1.5), analyses were initially run on untransformed variables per best practices (Tabachnick & Fidell, 2018). After square root transformation, each study variable had a normal distribution (skewness ranging from .64 to .70). No differences were found between the results of analyses with non-transformed and transformed data.

Table 8

Summary of Hypothesis Testing Results

	Covariates		
	None	Neuro	Neuro & T1 DV
Hypothesis	**Significant?**		
H1: Burnout (T2) → Engagement (T2)	Yes	Yes	Yes
H2: Demand (T1) → Burnout (T2)	Yes	Yes	No
H3: Demands (T1) → Engagement (T2)	No	No	No
H4: Demand (T1) → Burnout (T2) → Engagement (T2)	Yes	No	No
H5a: PSM (T1) → Engagement (T2)	No	No	No
H5b: SL (T1) → Engagement (T2)	No	No	No
H5c: MV (T1) → Engagement (T2)	No	No	No
H6a: PSM (T1) → Burnout (T2)	No	No	No
H6b: SL (T1) → Burnout (T2)	No	No	No
H6c: MV (T1) → Burnout (T2)	No	No	No
H7a/b/c: Resources (T1) → Burnout (T2) → Engagement (T2)	No	No	No
H8/H9/H10: Demands (T1)*Resources(T1) → Engagement (T2)	N/A[+]	N/A[+]	N/A[+]
H11/H12/H13: Demands (T1)*Resources(T1) → Burnout (T2)	No	No	No
H14a: PSM (T1)*SL(T1) → Engagement (T2)	No	No	No
H14b: PSM (T1)*SL(T1) → Burnout (T2)	No	No	No
H15a: PSM (T1)*MV(T1) → Engagement (T2)	No	No	No
H15b: PSM (T1)*MV(T1) → Burnout (T2)	No	No	No
H16a: MV (T1)*SL(T1) → Engagement (T2)	Yes	Yes	Yes
H16b: PSM (T1)*SL(T1) → Burnout (T2)	No	No	No
RQ 1-3a: Demands (T1)*Resource (T1)*Resource (T1) → Engagement (T2)	No	No	No
RQ 1-3b: Demands (T1)*Resource (T1)*Resource (T1) → Burnout (T2)	No	No	No

[+]Hypothesis testing not conducted due to nonsignificant direct effect.

CHAPTER VII

DISCUSSION

The current study examined the effects of COVID-19 hindrance job demands on job burnout and work engagement among public sector employees and the role of personal, social, and organizational resources in protecting employee well-being. Theoretically grounded in the Job Demands – Resources (JD-R) model (Demerouti et al., 2001), it was proposed that demands would negatively affect employee well-being while resources would have a positive effect. Furthermore, it was hypothesized that resources would "buffer" or weaken the deleterious effects of demands, in line with the fundamental proposition of multiplicative models of stress (Gonzalez-Mule et al., 2020). Additionally, resources were expected to interact and "reinforce" with each other to amplify the beneficial effects of resources on employee outcomes (Ross & Mirowsky, 2002). Finally, three-way interactions were also explored.

Support for the proposed hypotheses was mixed. In summary, job burnout was negatively related to work engagement. Additionally, COVID-19 hindrance demands were positively related to job burnout and indirectly negatively related to work engagement through job burnout. The organizational resource of mission valence positively predicted work engagement and interacted with servant leadership to positively predict work engagement. Notably, evidence of a buffering effect was not found. A full discussion of hypothesis results is presented below.

Hypothesis 1 predicted that job burnout (Time 2) would have a significant negative effect on work engagement (Time 2). This was supported, as job burnout was a significant predictor of work engagement even when controlling for the confounding effects of neuroticism (Time 1) and work engagement (Time 1). In the context of the current study, this suggests that public sector employees experiencing burnout during a time of crisis (e.g., COVID-19) are less likely to be

engaged in their work, echoing previous research (Agustina et al., 2022; Demerouti & Bakker, 2023). The moderate correlation (Cohen, 1988) between job burnout and work engagement (r = -.38, p < .01) and CFA results from the current study supporting a two-factor model are in line with other research suggesting that burnout and engagement are related, but distinct constructs (Hakanen & Schaufeli, 2012; Maricutoiu et al., 2017).

Hypotheses 2 and 3 predicted that COVID-19 hindrance job demands (Time 1) would have a direct effect on job burnout (Time 2) and work engagement (Time 2), respectively. Results provide support for Hypothesis 2 but not for Hypothesis 3. Additionally, Hypothesis 2 was supported while controlling for the effects of neuroticism (Time 1). This finding is consistent with previous research (Breevaart & Bakker, 2018; Li et al., 2022; Shoman et al., 2021; Tadic et al., 2015) and Proposition 2 of the JD-R model, which suggests the frequency and severity of job demands activates an energy depletion process that leads to burnout (Bakker et al., 2023). However, less research has explored this relationship during a crisis (Demerouti & Bakker, 2023), and results from the current study provide preliminary support for the utility of the JD-R model during such a time. Employees who reported experiencing more job demands during the early stages of the COVID-19 pandemic (April-May 2020) were more likely to report greater job burnout 30 days later.

Additionally, COVID-19 hindrance job demands (Time 1) were found to have a significant indirect effect on work engagement (Time 2) through job burnout (Time 2), in support of Hypothesis 4. This finding aligns with the updated JD-R model, which posits an indirect effect of job demands on motivation through strain (Bakker & Demerouti, 2017). Empirically, this indirect effect is supported by previous research that has found hindrance demands to predict burnout (Cavanaugh et al., 2000) and burnout to be an antecedent of engagement (Maricutoiu et

al., 2017). This suggests that public sector employees exposed to job demands at the beginning of the COVID-19 pandemic experienced job burnout 30 days later, which may have negatively affected their work engagement.

Hypotheses 5 and 6 predicted that personal, social, and organizational resources (Time 1) would have a significant direct effect on work engagement (Time 2) and job burnout (Time 2). Surprisingly, neither public service motivation (PSM) nor servant leadership were positively related to work engagement, despite leadership and personal resources being found to predict work engagement (Mazzetti et al., 2023). The only resource to positively affect work engagement was mission valence (organizational resource), providing partial support for Hypothesis 5. Although previous research has not conceptualized mission valence as a resource in the JD-R framework, this result is in line with previous research that has found other types of organizational resources to be positively related to work engagement (e.g., strategic alignment, organizational autonomy; Albrecht et al., 2018). This finding highlights the motivational potential of mission valence as an organizational resource and is discussed further in the theoretical and practical implication sections.

Hypothesis 6 was not supported, as PSM (Time 1), servant leadership (Time 1), and mission valence (Time 1) were not significantly related to job burnout (Time 2), which is consistent with some studies (e.g., PSM, Van Loon et al., 2015; Autonomy, Van den Broeck et al., 2017), but not others (Crawford et al., 2010; Hakanen et al., 2008). Similarly, Hypothesis 7, which proposed an indirect effect of resources on engagement through burnout, was also not supported, consistent with the notion that neither PSM, servant leadership, nor mission valence positively affected work engagement by lessening the negative effects of job burnout.

The results of the moderation hypothesis testing were mostly non-significant. Hypotheses 8-13 predicted a buffering effect of personal, social, and organizational resources (Time 1) on the relationship of COVID-19 hindrance job demands (Time 1) with work engagement (Time 2) and job burnout (Time 2). Hypotheses 8-10 were not tested since COVID-19 hindrance job demands did not significantly predict work engagement, and a significant direct effect in the hypothesized direction was a prerequisite for conducting moderation analysis. Hypotheses 11-13 predicted that PSM, servant leadership, and mission valence would moderate the relationship between COVID-19 hindrance demands and job burnout. Although resources have been considered vital during a crisis for their potential protective effects (Demerouti & Bakker, 2023), none of the ones examined in the current study showed this effect. Thus, Hypotheses 11-13 were not supported. Current research on the potential for resources to act as a buffer is mixed. Some studies have found a moderating effect (Bakker & Demerouti, 2017; Igic et al., 2017), while the current study and others found no effect (Gonzalez-Mule et al., 2020).

Hypotheses 14-16 predicted that personal, social, and organizational resources (Time 1) would interact to "reinforce" or strengthen their effects on job burnout (Time 2) and work engagement (Time 2). There was no significant interaction of PSM with servant leadership or mission valence. Thus, Hypotheses 14 and 15 were not supported. In partial support of Hypothesis 16, there was a significant interaction between mission valence and servant leadership when predicting work engagement but not job burnout. This finding is similar to previous research that has found transformational leadership to interact with mission valence to positively affect employee performance ratings (Caillier, 2014).

Caillier (2014) proposed that the moderating potential of mission valence stems from enhanced perceptions of goal importance associated with high levels of mission valence, which

interacts with transformational leadership behaviors that facilitate follower goal obtainment. The current study suggests servant leadership behaviors also interact and pair well with high mission valence. Vroom's (1964) expectancy theory offers a potential explanation for this. Specifically, when an employee is attracted to their organization's mission (high mission valence) and a servant leader can clearly articulate how their role is vital in the "big picture" of the organization, follower perceptions of expectancy, instrumentality, and valence are enhanced and promote greater work engagement. In the context of the current study, it can be suggested that work engagement was the highest when public sector employees had a servant leader who took the time to explain how their role fits into a desirable organizational mission during the COVID-19 pandemic.

Finally, a total of six three-way interactions were explored. It was proposed that resources (Time 1) would interact among themselves and moderate the relationship of COVID-19 hindrance demands (Time 1) with work engagement (Time 2) and job burnout (Time 2). Neither the three interactions predicting work engagement nor job burnout were significant in the Merged Time 2 and the larger Time 1 samples. These types of interactions have rarely been studied in the JD-R framework (Loh et al., 2018), and results from the current study do not provide evidence of a three-way interaction between demands and resources.

Theoretical Implications

The current study sought to test the utility of the Job Demands-Resources (JD-R) model in explaining work engagement and job burnout among public sector employees during a crisis like the COVID-19 pandemic (Demerouti & Bakker, 2023). Specifically, results have implications for several of the theoretical propositions proposed by the JD-R model during a crisis (Demerouti & Bakker, 2023) and more broadly (Bakker et al., 2023).

First, results provide some support for Proposition 1 of the JD-R model during a time of crisis, which suggests, in part, that crises are accompanied by increased job demands (Demerouti & Bakker, 2023). The current study measured COVID-19 hindrance demands by asking participants, “In the new work conditions brought on by the COVID-19 pandemic, how often do you find it difficult or impossible to do your job because of ... ?”. Results indicated that more than half of respondents (58%) experienced COVID-19 hindrance job demands about once or twice per month, 13% experienced COVID-19 hindrance job demands about once or twice per week, and 3% experienced these demands once or twice per day. This suggests that job demands are associated with a crisis (e.g., the COVID-19 pandemic) and experienced by employees.

Next, Proposition 2 of the JD-R model during a crisis proposes that employees with manageable job demands and high job resources can better maintain satisfactory performance and well-being (Demerouti & Bakker, 2023). Results provide some support for this position. Specifically, public sector employees who reported experiencing COVID-19 hindrance job demands were more likely to report greater job burnout (detrimental to well-being), and those who reported greater mission valence (organizational resource) were more likely to report higher levels of work engagement (a predictor of performance; Mazzetti et al., 2023). These findings also support Proposition 2 of the JD-R model more generally (e.g., beyond a crisis; Bakker et al., 2023), which suggests job demands and resources likely instigate two different processes. The significant direct effects of COVID-19 hindrance job demands and mission valence (organizational resource) on job burnout and work engagement are consistent with the posited health impairment and motivational processes.

Finally, tests of the buffering and reinforcement hypotheses also have implications for the JD-R model (Bakker et al., 2023; Demerouti & Bakker, 2023). Specifically, the finding that

mission valence and servant leadership significantly interacted to predict work engagement provides support for the "reinforcement" (aka boost) hypothesis inherent in Proposition 4 from the JD-R during a time of crisis and Proposition 3 from the JD-R more generally. Interestingly, none of the hypothesized buffering effects were found to be significant, despite being postulated in Propositions 5 and 6 of the JD-R during a time of crisis and Proposition 3 of the JD-R more generally.

The lack of support for a buffering effect of resources contributes to the ambiguity of evidence around multiplicative models of stress. As Gonzalez-Mule and colleagues (2020) note, current research in support of multiplicative models of stress is mixed. Some studies have found support for the buffering effect of resources (Bakker & Demerouti, 2017; Igic et al., 2017) in line with the JD-R Propositions, while other studies have found no evidence of a buffering effect (Gonzalez-Mule et al., 2020; Viswesvaran et al., 1999). In the current study, it was believed that resources would serve as a buffer, mainly because the demands were conceptualized as hindrance demands. Previous research has suggested that resources might best serve as a buffer when demands are explicitly categorized as hindrances (Gonzalez-Mule et al., 2020). However, results from the current study do not support this general proposition of multiplicative models of stress.

One potential explanation for the lack of a buffering effect could be the nature of the demands and resources in the current study. Specifically, COVID-19 hindrance job demands reflected new and intensified job demands resulting from the COVID-19 pandemic. Conversely, PSM, servant leadership, and mission valence were resources that existed before the COVID-19 pandemic. Thus, the resources examined in the current study might not have been suited to meet the novelty of the COVID-19 hindrance demands. According to the matching hypothesis, the degree to which resources moderate the stressor (e.g., job demands) – strain (e.g., job burnout)

relationship largely depends on the extent to which resources, stressors, and strain match (triple-match principle; De Jong & Dormann, 2006). It is possible that during a crisis such as the COVID-19 pandemic, COVID-19-specific resources might more effectively buffer the negative effects of COVID-19-specific demands than pre-existing resources (e.g., PSM). For example, outdated or inadequate organizational rules and procedures (a specific COVID-19 hindrance demand examined in the current study) might be better mitigated with new and timely rules and procedures that meet the current crisis (a crisis-specific organizational resource). Recent empirical evidence has provided some preliminary support for this line of thinking, with job autonomy moderating the effects of the COVID-19 pandemic on exhaustion (Meyer et al., 2021).

Lastly, the specific finding that job burnout predicts work engagement supports the core proposition of conservation of resources (COR) theory (Hobfoll, 1989), that employees experiencing burnout are susceptible to a "loss spiral" in which they progressively lose resources and are thus unable to devote the resources needed to foster work engagement (Bakker & Costa, 2014). This finding extends COR-related research to understand the deleterious effects of job burnout among public sector employees during a crisis. When employees are experiencing burnout, it appears they are less capable of devoting the effort required to foster adequate work engagement.

Practical Implications

Results from the current study have practical implications for public sector organizations. First, during a crisis (e.g., COVID-19) with increased ambiguity and uncertainty, employees are exposed to new and intensified job demands associated with job burnout. As a result, public sector organizations should be aware of the job demands experienced by employees and provide support to help them manage those demands. Admittedly, this can be difficult during a crisis due

to an increased emphasis on maintaining business operations (Demerouti & Bakker, 2023). However, if public sector organizations wish to continue providing high-quality constituent services during a crisis, managing demands and resources at the start of a crisis is crucial.

Several “top-down” interventions aimed at optimizing job demands and resources have been found effective (van Wingerden & van der Vaart, 2019). First, organizations can adopt job redesign interventions. These interventions have been found to positively affect employee well-being and performance by changing the characteristics of the job to enhance motivating characteristics (i.e., autonomy and social support), remove obstacles to successful performance, and ensure manageable job demands (Holman & Axtell, 2016). Second, organizations can ensure leaders are trained to manage employees’ work environment by providing their subordinates with resources and working to mitigate or manage demands (van Wingerden & van der Vaart, 2019). Finally, organizations can invest in training focused on developing individual psychological capital. (e.g., self-efficacy, optimism, hope, and resiliency; Luthans et al., 2007). As a personal resource, psychological capital has also been found to be particularly useful during a crisis (Milosevic et al., 2017) and as a buffer for the negative effects of job insecurity (demand) on subjective well-being (Darvishmotevalia et al., 2020).

The current study also highlights mission valence's motivational potential as an organizational resource available to public sector employees during a crisis. It appears that public sector employees are more motivated to devote energy and effort to accomplishing work goals when they are attracted to their organization’s mission. Previous research has suggested how to do this by ensuring the organization’s mission is “difficult but feasible, reasonably clear and understandable, worthy/worthwhile/legitimate, interesting/exciting, important/influential, and distinctive” (Wright & Pandey, 2011, p. 24). Additionally, public sector organizations should

regularly communicate accomplishments, services provided, and constituents helped so employees can feel that their organization offers something valuable to the public. Both interventions also have the advantage of relatively low cost and minimal risk. Thus, investing the time and effort to improve employee perceptions of mission valence would be a prudent step towards enhancing work engagement.

Finally, results provide some initial support for the utility of a servant leadership style in the public sector. Although servant leadership was not found to affect work engagement or job burnout directly, this leadership style did interact with and amplify the positive benefits of mission valence. It appears that servant leaders' humility, empathy, and compassion pair well with an attractive organizational mission and perceived meaningful social contributions. Public sector organizations might consider HR practices that support the selection, promotion, and development of leaders who engage in servant leadership behaviors. Specifically, Liden et al. (2008) recommends building a culture of servant leadership by selecting and promoting people with high integrity, strong ethics, and a desire to build long-term relationships with followers. Servant leadership training consisting of self-assessments, educational sessions, and goal setting is an accessible way to enhance servant leadership at every level of the organization (Northouse, 2019).

Limitations and Directions for Future Research

Limitations of the current study should be considered when interpreting the results. First, data were collected during a unique period in U.S. history, the COVID-19 pandemic. Although changes to the workplace brought on by the COVID-19 pandemic are argued to be similar to those from other crises (i.e., natural disasters, economic recessions; Demerouti & Bakker, 2023), the unique nature of the COVID-19 pandemic cannot be overlooked. For example, the pandemic

was associated with significantly higher levels of psychological distress among the general population (Xiong et al., 2020). Thus, some respondents could have been struggling to cope with the effects of the COVID-19 pandemic, resulting in them responding to the survey in a negative mood. The mood of a respondent could influence subjective responses to questions about work conditions, particularly job demands, attitudes, and social interactions (Askim & Knardahl, 2021). In the context of the current study, respondents' negative mood could have influenced survey responses such that negative items (e.g., job demands and job burnout) were perceived more severely, and positive items (e.g., resources and work engagement) were perceived less meaningful.

Future research should continue to explore the utility of the proposed personal, social, and organizational resources examined in the current study among a sample of public sector employees now that the COVID-19 pandemic is over and responses are less susceptible to bias resulting from participant mood. Further examination of mission valence as an organizational resource in the JD-R framework would be particularly insightful, given the significant effect that was found despite the potential for a negative mood to diminish the salience of mission valence. Thus, it would be helpful to more clearly understand if the motivating effect of mission valence is also observed during normal business operations and if that effect is potentially more robust than during a crisis.

Second, the population in the current study consisted of public-sector employees. Previous research has shown that public-sector personnel management uniquely differs from personnel management in the private sector (Wright et al., 2012); thus, results may not generalize to the private sector. Additionally, the demands and resources included in the current study were particularly relevant to the population of public sector employees. While this limitation was by

choice (delimitation), future research could explore the utility of mission valence more broadly by examining its effects among private sector employees. Relatedly, mission statements are widely used by all organizations to communicate a purpose, but research on their effectiveness has not been theoretically grounded nor clearly understood (Alegre et al., 2018). Although mission valence was initially intended to capture how employees perceive the attractiveness of their public sector agency's mission (Rainey & Steinbauer, 1999), there might be potential for mission valence to serve as a motivating resource for private sector employees as well by capturing the attractiveness of the mission statement. Thus, mission valence should be explored further among private sector employees, as it can help explain how employees feel about their organization's mission statement and the potential effects of those perceptions on important employee outcomes (e.g., job burnout and work engagement).

Third, the sample of 106 public sector employees used for hypothesis testing in the current study could be considered underpowered. Previous research has suggested that a sample size of less than 120 might not have enough power to detect medium or large moderating effects (Aguinis, 1995). Thus, the lack of support for the buffering effect of resources could have resulted from insufficient power to detect a significant effect. Future research would benefit from a larger sample with more power to detect significant effects (Aguinis, 1995), especially when testing the moderation effects proposed in the JD-R model (Bakker et al., 2023).

Finally, the current study adopted a 30-day time interval between the Time 1 and Time 2 surveys. This specific time interval was chosen in response to a call for more "shortitudinal studies" that adopt a time lag less than the typical three-month period between measurements (Dormann & Griffin, 2015). Additionally, a 30-day time interval was deemed sufficient to detect potential effects but short enough to capture the swift changes during the COVID-19 pandemic.

However, the short time interval between measurements contributed to the high autoregressive correlations between outcome variables measured at each time point (e.g., job burnout T1 and job burnout T2). The high autoregressive correlation suggests that an earlier measurement strongly predicts the same variable measured later. In the current study, when a dependent variable measured at Time 1 was modeled as a covariate when predicting the same variable measured at Time 2, all but one of the significant effects found became non-significant. Further, the current study adopted a two-wave design, which is limited in fully explaining changes over time and implying causation (Brusso et al., 2014).

Future research would benefit from adopting an actual longitudinal design with an additional measurement at a third-time point. Given the limitations of a two-wave panel study, three measurement time points are recommended for longitudinal studies (Brusso et al., 2014). Some nonsignificant findings could have resulted from not having a third measurement time point beyond 30 days after the first time point. Furthermore, additional measurements would also provide insights into the longevity and trajectory of the significant effect of mission valence on work engagement beyond 30 days. Given that an organization's mission, contributions, and strategic priorities are unlikely to change regularly, better understanding the stability of mission valence's effect on employee outcomes over time is critically important.

Conclusion

The current study employed the Job Demands – Resources (JD-R) model (Demerouti et al., 2001) as a theoretical framework to better understand the effects of COVID-19 hindrance demands and personal, social, and organizational resources on work engagement and job burnout among a sample of public sector employees during a time of crisis (e.g., COVID-19 pandemic). Results found that COVID-19 hindrance demands predicted job burnout measured 30 days later,

whereas the organizational resource mission valence predicted work engagement 30 days later. These findings provide some evidence in support of the core proposition of the JD-R model, that demands and resources initiate a health depletion and a motivational process, respectively. Additionally, job burnout was significantly related to work engagement, as were demands indirectly through their effect on job burnout. Finally, a significant interaction between social and organizational resources (servant leadership and mission valence) on work engagement provides some support for the "reinforcement" hypothesis (Ross & Mirowsky, 2010). The significant results found in the current study also contribute to the emerging field of behavioral public administration (BPA; Grimmelikhuizsen et al., 2016) by demonstrating the potential of the JD-R model as a theoretical framework to explain employee outcomes in the public sector. In conclusion, the current study makes several theoretical and practical contributions that can advance the understanding of personnel management in the public sector during a crisis and provides avenues for future research.

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APPENDIX

Job Burnout (Time 1 and Time 2)
Instructions: *Please rate your level of agreement with the following statements. There are no right or wrong answers, so please answer openly and truthfully.*

1. I feel emotionally drained from my work
2. I feel used up at the end of the workday
3. I feel burned out from my work

Response Scale

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Work Engagement (Time 1 and Time 2)
Instructions: *Please rate your level of agreement with the following statements. There are no right or wrong answers, so please answer openly and truthfully.*

1. I feel bursting with energy while working
2. I am enthusiastic about my job
3. I am immersed in my work

Response Scale

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

COVID-19 Hindrance Demands (Time 1 and Time 2)
Instructions: *Under the new work conditions due to the COVID-19 pandemic, how often do you find it <u>difficult</u> or <u>impossible</u> to do your job because of ... ?*

1. Outdated or inadequate organizational rules and procedures.
2. Demanding coworkers.
3. Unsupportive supervisor.
4. Lack of equipment or supplies.
5. Inadequate training.
6. Interruptions by others at home.
7. Lack of necessary information about what to do or how to do it.
8. Incompatible requests.
9. Inadequate help from others.

10. Difficult customers, clients, and/or constituents.
11. Unrealistic expectations.
12. Loss of autonomy.
13. Work changes/restrictions to comply with COVID-19 directives.
14. Isolation from team/coworkers.
15. Changes to work schedule.
16. Unfamiliar work tasks being demanded of me.
17. Technological difficulties.
18. Childcare/eldercare responsibilities during workday.
19. Additional work responsibilities.
20. Lack of COVID-19 personal protective equipment.
21. Personal conflict with coworkers.

Response Scale:

- Less than once per month or never
- Once or twice per month
- Once or twice per week
- Once or twice per day
- Several times per day

Public Service Motivation (Time 1 and Time 2)
Instructions: *Please rate your level of agreement with the following statements. There are no right or wrong answers, so please answer openly and truthfully.*

1. Meaningful public service is very important to me.
2. I am often reminded by daily events about how dependent we are on one another.
3. Making a difference in society means more to me than personal achievements.
4. I am prepared to make sacrifices for the good of society.
5. I am not afraid to go to bat for the rights of others even if it means I will be ridiculed.

Response Scale:

- Strongly Disagree
- Disagree
- Somewhat Disagree
- Somewhat Agree
- Agree
- Strongly Agree

Servant Leadership (Time 1 and Time 2)
Instructions: *Please rate your level of agreement with the following statements. There are no right or wrong answers, so please answer openly and truthfully.*

1. My supervisor can tell if something work-related is going wrong
2. My supervisor makes my career development a priority

3. I would seek help from my supervisor if I had a personal problem
4. My supervisor emphasizes the importance of giving back to the community
5. My supervisor puts my best interests ahead of his/her own
6. My supervisor gives me the freedom to handle difficult situations in the way that I feel is best
7. My supervisor would NOT compromise ethical principles in order to achieve success

Response Scale:

- Strongly Disagree
- Disagree
- Somewhat Disagree
- Somewhat Agree
- Agree
- Strongly Agree

Mission Valence (Time 1 and Time 2)
Instructions: *Please rate your level of agreement with the following statements. There are no right or wrong answers, so please answer openly and truthfully.*

1. This organization provides valuable public services.
2. I believe that the priorities of this organization are quite important.

Response Scale

- Strongly Disagree
- Disagree
- Somewhat Disagree
- Somewhat Agree
- Agree
- Strongly Agree

Neuroticism (Time 1)
Instructions: *Please rate your level of agreement with the following statements. There are no right or wrong answers, so please answer openly and truthfully.*

I...

1. Have frequent mood swings.
2. Am relaxed most of the time.
3. Get upset easily.
4. Seldom feel blue.

Response Scale

- Strongly disagree
- Disagree
- Neither agree nor disagree

- Agree
- Strongly agree

Inclusion Criteria Questions (Time 1)

1. Are you currently a public sector employee? For the purposes of the current study, a public sector employee is anyone who is employed by a local, state, or federal government, including public school teachers.

   Response Options:

   - Yes
   - No
   - I'm currently furloughed
   - I've recently been laid off
   - Not Sure (*Explain* – Open Text Box)

2. Which type of public employment best describes your current employment status? (*If anything but No or Recently Laid Off to Previous Question)*

   Response Options:

   - I am employed by a local government (County, Municipality, City, Town, District)
   - I am employed by a state government
   - I am employed by the Federal Government
   - I am a public-school employee
   - Other (please describe your current employment)

3. What is your current job position? (*If yes to local, state, or federal government*)

   Response Options:

   - Open-ended

4. With is your current department? (*If yes to local, state, or federal government*)

   Response Options:

   - Open-ended

5. Which best describes your role as a public-school employee? (*If yes to public school teacher)*

   Response Options:

   - Administrative

- Classroom Teacher
- Special Area Teacher (Art, Music, Gym, etc.)
- Support Staffs (Psychologist, Speech / Language, Special Ed, etc.)
- Custodial Staff / Maintenance
- Other (please specify)

Current Work Situation (Time 1)

1. How long have you worked in your current job?

Response Options:
- Selection boxes to indicate years and months of tenure

2. Please select the statement that best described your typical work situation **before the COVID-19 outbreak**.

Response Options:

- I normally did all of my work in the office (no telework)
- I normally did all of my work in the field (no telework)
- I normally did the majority of my work in the office/field (teleworked about 1-day a week)
- I normally split my time between home and office/field (teleworked about 2-3 days a week)
- I normally did the majority of my work from home (teleworked about 4 days a week)
- I normally did all of my work from home (teleworked full-time)

3. On average, how many hours per week did you work for your current public sector employer **before the COVID-19 outbreak?**

Response Options:

- I was furloughed (not currently working)
- Less than 5 hours per week
- 6 – 50 hours (in one-hour intervals)
- 51 or more hours
- I was working an alternative work schedule (please specify)

4. Please select the statement that best describes your typical work situation **right now**.

Response Options:

- I am doing all of my work in the office (no telework)
- I am doing all of my work in the field (no telework)

- I am doing the majority of my work in the office/field (telework about 1-day a week)
- I am splitting my time between home and office/field (telework about 2-3 days a week)
- I am doing the majority of my work from home (telework about 4 days a week)
- I am doing all of my work from home (telework full-time)

5. On average, how many hours per week do you work **right now?**

Response Options:

- I've been furloughed (not currently working)
- Less than 5 hours per week
- 6 – 50 hours (in one-hour intervals)
- 51 or more hours
- I'm working an alternative work schedule (please specify)

Demographic Questions (Time 1)

1. What is your highest level of education?

Response Options:

- Less than high school
- High school graduate
- Some college
- Associate
- Bachelor
- Master
- PhD
- Graduate/Professional degree (MD, JD)

2. What is your age?

Response Options:

- Range from 18 – 80+

3. With what gender do you most identify?

Response Options:

- Male
- Female
- Other
- Prefer not to say

4. What is your race?

Response Options:

- Asian
- American Indian or Alaska Native
- Black or African-American
- Native Hawaiian or Other Pacific Islander
- White
- Other, please specify
- Two or more races/ethnicities
- Not certain
- Prefer not to say

5. What is your current marital status?

Response Options:

- Single, living alone
- Single, living with a partner
- Married
- Divorced
- Widowed

6. How many children or dependents do you have currently living with you?

Response Options:

- Range from 0 to 10 or more

Unique ID Code
Instructions: *For a follow-up survey one month from now, we would like to be able to link your responses across surveys, while still maintaining your anonymity and confidentiality. To that end, we need your help to create a unique code below. This code will only be used to link surveys and is intended to ensure that your responses are kept confidential.*

To create your unique code, please answer the following questions.

What is the …
First letter of your biological mother's first name? ____
First letter of your biological father's first name? ____
Number of siblings (including half-brothers and sisters)? ____
First letter of the name of the high school you graduated from? ____

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