

ABSTRACT

WILGUS, SAMUEL JAMES. Making a Job More Hectic than it Already is: The Effect of Work Design Configuration on Job Stressor Fluctuations, Job Satisfaction, and Turnover Intentions (Under the direction of Dr. Adam Meade).

Employee turnover, often the result of low levels of job satisfaction, is a serious problem facing organizations in a competitive environment where retaining top talent drives competitive advantages. As millions of workers begin to shift towards virtual work for the first time as a result of the COVID-19 pandemic, preventing employee dissatisfaction and subsequent turnover poses a serious challenge for organizations. Using moderated mediation framework, this study examines the indirect effect of job stressor fluctuations on turnover intentions through the effect of job satisfaction. The strength of this indirect effect is found to vary based on the holistic configuration of autonomy, skill variety, interdependence, social support, and virtual work experience. Results suggest that, for new virtual workers, these traditionally beneficial facets of work design instead result in a greater influence of job stressor fluctuations on turnover intentions through decreased job satisfaction.

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Making a Job More Hectic than it Already is: The Influence of Work Design Configuration on
the Interplay of Job Stressor Fluctuations, Job satisfaction, and Turnover Intentions

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A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Doctor of Philosophy in Psychology

Raleigh, North Carolina
2021

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INTRODUCTION

Understanding why and when employees choose to leave their jobs has been of great interest to organizational researchers since 1917, when Fisher began examining the costs associated with hiring and replacement (Fisher, 1917b). These costs, which include recruiting, selecting, and training replacements, often reach 200% of the annual salary for the vacant job, highlighting the financial incentives for organizations to better understand and predict turnover (Allen et al., 2010). Furthermore, employees quitting their job disrupts productivity (Hasknecht et al., 2009) and ultimately reduces the overall financial performance of the organization (Park & Shaw, 2013). Turnover also results in not only singular losses to an organization's base of tacit knowledge and social capital (Dess & Shaw, 2001), but also a potential exodus of additional employees through turnover contagion (Felps et al., 2009).

Being unable to retain, and ultimately losing, top talent to competing organizations is a further indirect cost to voluntary turnover. The risks of losing top talent and overall human capital is especially pertinent within the 'knowledge economy' – work that is characterized by heavy reliance on information technology, computers, and most of all, knowledge to create goods and services. Within the knowledge economy, organizations' intellectual human capital is quickly becoming a major component in sustaining a competitive edge (Boudreau & Ramstad, 2003). The vast interconnectedness of companies and industries that has resulted from globalization has also resulted in hypercompetitive work environment where mismanagement of knowledge workers can result in rapid turnover, poaching, and loss of competitive advantages (Darr & Warhurst, 2008; Drucker, 1999; Huang, 2011; Mandt, 1978). Thus, avoiding attrition of top talent is a major concern for organizational competitiveness.

Job Satisfaction

Given the importance of understanding and predicting voluntary turnover within the modern knowledge economy, there has been a plethora of research and various theories developed to provide insight into the antecedents, contextual factors, and overall process of employees choosing to leave their job. Paramount to summarizing the influences of these various factors is delineating what is (and is not) considered turnover. Researchers generally define voluntary turnover as an employee voluntarily separating from the organization where he or she is employed (Campion, 1991; Mobley, 1982). Voluntary turnover differs from separation from an organization based on non-voluntary reasons such as layoffs, dismissals, and end-of-career separations (e.g., retirement). In addition, voluntary turnover is differentiated from layoffs or dismissals in being an unexpected and uncontrollable loss in human capital and typically results in costs to the organization, as opposed to savings.

A recent meta-analysis identified several broad categories of predictors for voluntary turnover such as characteristics and features of the job, characteristics of the organization, employee tenure, stress, person-environment fit, and availability of alternatives (Rubenstein et al., 2018). However, one of the most consistent predictors of voluntary turnover is job satisfaction (Chen et al., 2011; Hom et al., 2017; Rubenstein et al., 2018). Most theories of turnover support the notion that job satisfaction negatively relates to turnover intentions (i.e., making a cognitive decision to quit). Indeed, job attitudes, such as job satisfaction and organizational commitment, are routinely found to be core predictors of voluntary turnover regardless of the theoretical basis for understanding turnover (Boswell, et al., 2005; Hom & Griffeth, 1995; Lee et al., 1999; Lee et al., 1996; Mobley, 1982; Steel & Lounsbury, 2002; Steers & Mowday, 1981).

There have been two broad streams of research within the voluntary turnover literature that both heavily incorporate the role of job satisfaction. The first stream can be considered the more “traditional” foundation for understanding and predicting turnover and primarily examines two constructs as predictors of turnover: desire to leave and ease of leaving (i.e., job dissatisfaction and perceived job opportunities; March & Simon, 1958; Price, 1977; Price & Mueller, 1981). This foundational approach to understanding turnover has stemmed from process models that describe how turnover ultimately evolves from job dissatisfaction through mediating constructs such as thoughts of quitting, evaluating the utility of searching for new jobs, searching for actual alternatives, and comparing alternatives with the present position (Mobley, 1977). In addition, there have been useful content models grounded in this foundational approach that incorporate distal antecedents such as job satisfaction and proximal antecedents such as turnover intentions (Mobley et al., 1978). This approach highlights initial attitudes as a starting point that eventually can evolve into voluntary turnover.

In contrast, a second broad stream of research challenges the assumption that job satisfaction is the primary cause of turnover and instead focuses on jarring events (i.e., “shocks”) as a key driver of turnover (Lee & Mitchell, 1994). This approach, termed the “unfolding model” of turnover, describes a conventional path to turnover based on attitudes but also describes three other unfolding paths that involve shocks: receiving an unsolicited job offer, events at work that are in violation of employee values, or preexisting plans to leave, such as in the case of quitting to raise a new child full-time (Hom & Griffeth, 1991). Some of these paths may unfold independently from an employee’s satisfaction with his or her job. These paths to leaving are more externally initiated and thus less controllable by organizations. Other “shocks”, however, may directly impact an employee’s job satisfaction as in the case of an incident that violates the

employee's values. In either case, these approaches challenge the typical approach to placing emphasis on a single snapshot of job satisfaction to predict turnover and instead place an emphasis on how job satisfaction can diminish over time as a function of accumulated experiences, such as job stressors (Holtom et al., 2008; Hom et al., 2017).

Job Stressors

Examining the root causes of declines in job satisfaction has received considerable attention in research; relationships between a wide variety of job stressors and job satisfaction have been examined. For example, various scholars have examined the extent to which role conflict, or incompatibility in how expectations are understood (Rizzo et al., 1970), and job satisfaction are negatively related at a global level (Bedeian & Armenakis, 1981) and at the facet level (e.g., pay satisfaction, coworker satisfaction; Fisher & Gitelson, 1983). In addition to role stressors (e.g., role conflict), task-related stressors (e.g., increased workload) and social stressors (e.g., lacking social support) have been shown to impact job satisfaction and overall well-being at work (Sonnentag., 2003). This negative relationship between a stressor and job satisfaction can be understood with the transactional model of stress (Lazarus & Folkman, 1984).

The transactional model of stress describes a two-stage process in which individuals identify a stressor as a potential threat (or not) with an appraisal of whether (or not) they have the resources available (e.g., emotional, cognitive resources) to handle the stressor. Identification of stressors that are threatening, combined with an appraisal of insufficient resources, triggers a stress response. For example, consider an employee who is asked to perform a duty at work that falls outside of his or her understood job description. This individual may view this request as a threat to his or her task accomplishment and/or personal growth. In addition, this individual may

not feel appropriately prepared to handle the new tasks, resulting in a negative stress response and lower levels of job satisfaction.

However, not all stressors are viewed as negative to the employee. Indeed, the most well-established framework for stressors delineates stressors from those that are perceived as a challenge from those that perceived as a hinderance (i.e., the challenge-hinderance stressor framework; Cavanaugh et al., 2000). This framework describes two broad domains of stressors: challenge stressors, which employees perceive as opportunities for higher achievement and/or personal/professional growth (e.g., expanded work responsibilities, increased workload), and hinderance stressors, which employees perceive as obstacles to accomplishment and/or growth (e.g., role conflict, insufficient resources, “red-tape”). Overall, research has shown that while any type of stressor results in employee strain, challenge stressors can be motivating and beneficial to employee performance (Hargrove et al., 2013; Lin et al., 2015).

However, recent research on stressors has claimed that the benefits associated with challenge stressors may be an artifact of measuring these stressors as a static phenomenon or workplace characteristic (Rosen et al., 2020). Similar to the shift towards viewing satisfaction dynamically, research by Rosen and colleagues (2020) mark a shift from focusing on the level of challenge stressors as a static phenomenon to examining how employees are affected by stressor patterns. This approach is grounded in the aforementioned transactional model of stress; individuals consider predictability of stressors as a key component in whether they have sufficient resources to appropriately handle a stressor. Thus, when stressors can be anticipated and planned for, sufficient resources can be allocated (Parke et al., 2018). On the other hand, constantly changing levels of job stressors, including challenge stressors, may increase the perception of stressors as an unpredictable, dangerous event that should be viewed as a potential

threat, thereby resulting in a stress response (Miller, 1981). Indeed, Rosen and colleagues (2020) found that when challenge stressors vary across time periods, they have a negative influence on employee outcomes. On the other hand, when challenge stressors are stable over time, they have a positive influence on employee outcomes.

Although Rosen and colleagues (2020) discuss the influence of job stressor fluctuations on employee performance, this finding goes hand-in-hand with the theoretical foundations for changes in job satisfaction, and by extension, employee turnover. Chen and colleagues (2011) discuss several additional psychological theories that emphasize the interplay between job stressor fluctuations and job satisfaction, including prospect theory, theory of spirals, sense-making theory, and conservation of resources theory. Each of these will be discussed in turn.

Prospect theory (Kahneman & Tversky, 1979) describes how people make decisions in uncertain environments based on how these decisions can lead to gains or losses. The perception of gains or losses in decision-making is based heavily upon an individual's frame of reference; that is, the extent to which an individual evaluates his or her current situation in comparison to a reference point. Prospect theory would suggest that in evaluating their level of job satisfaction, and subsequently evaluating relevant workplace decisions such as turnover intentions or decisions to engage in withdrawal behaviors, employees are likely to be heavily influenced by increases or decreases in stress levels in the job compared to some prior reference point. In other words, prospect theory helps us understand why changes in the level of job stressors influence a negative evaluation of the job beyond the overall average level of job stressors. Additionally, prospect theory emphasizes that personal losses (i.e., increases in stress) are more salient to individuals than gains (i.e., decreases in stress). Thus, an employee that experiences fluctuating

job stressors is unlikely to consider increases and decreases equally; increases in job stressors will be more salient.

The theory of spirals (Lindsley et al., 1995) and sense-making theory (Louis, 1980) further describe how an individual's level of job satisfaction forms as function of the perception of changing job stressors. A negative evaluation of an individual's job (i.e., job dissatisfaction) can represent an employee's attempt to make sense of a downward spiral that manifests from a pattern of work experiences that have accumulated over time (Hulin, 1991). Based on fundamental psychological phenomena such as the "self-fulfilling prophecy" and the "Pygmalion effect", the theory of spirals and sense-making theory together describe fluctuations in stressors and decreases in satisfaction as potentially self-amplifying loops that result in further decreases in satisfaction, if left unchecked, by resulting in greater salience of, and attribution towards, sources of workplace dissatisfaction. Consider an individual that was at one point in a routine at work but is now experiencing less social support and role clarity after being asked to work remotely. This individual may begin to make sense of their deteriorating satisfaction levels by attending to sources of job dissatisfaction (e.g., changing job stressors) and attributing likely future decreases in satisfaction to these sources. In other words, downward spirals can lead individuals to think their situation is likely to continue to be increasingly bad or unpleasant as individuals make sense of their changing perception of work (Lindsley et al., 1995; Louis, 1980).

Conservation of resources theory (Hobfoll, 1989) further helps us understand when this downward spiral is likely to unfold for an individual. This theory posits that individuals try to maintain and conserve resources and energies. As discussed with the transactional model of stress (Lazarus & Folkman, 1984), negative psychological strain and stress from unpredictable job stressors can diminish resources and energies. However, the process of attempting to protect

resources can become an additional source of other resources being depleted, further contributing to a “loss spiral” (Hobfoll, 1989).

Based on these theories, the overall interplay between job stressor fluctuations and job satisfaction can be summarized in three propositions. First, previous levels of job stress provide a reference point for interpreting current and future job stress. Second, stressor levels are more salient to an individual’s evaluation of the job (i.e., job satisfaction) to the extent they deviate from prior levels and are unexpected in nature. Finally, negative deviations (i.e., increases in stress) are more salient than positive deviations because they require additional mental resources to be dealt with. Empirical evidence, such as fluctuations in challenge stressors influencing employee well-being (Rosen et al., 2020) and new job responsibilities leading to decreases in job satisfaction (Boswell et al., 2005) supports this theoretical framework.

Work Design Characteristics

Preventing this downward spiral that results from a combination of fluctuating job stressors and subsequent job dissatisfaction through situational factors has been a focal point of research on workplace characteristics (Agervold & Mikkelsen, 2004; Bakker & Demerouti, 2007). Indeed, theories such as the job demand-job control model (Karasek, 1979) approach reducing workplace stress through providing employees with the necessary resources to deal with stressors by increasing job control and autonomy (Fernet et al., 2004). However, research incorporating workplace characteristics into the relationship between job stressor fluctuations, job satisfaction, and employee outcomes, such as turnover, is limited (Rosen et al., 2020). One study by Fernet and colleagues (2004) examined the interplay between job demands, job control, and burnout. This study found that job control moderated the negative influence of job demands on emotional exhaustion, supporting the general notion of the job demand-job control model.

However, as noted in recent research (Rosen et al., 2020), this study failed to consider the dynamic nature of job demands. In addition, Fernet and colleagues only examined whether an employee had opportunities for control and decision-making in the job and did not consider various other work design characteristics, such as the level of social support or being able to use a variety of skills (Morgeson & Humphrey, 2006). As a result, there is limited guidance to organizations, managers, and practitioners regarding how to reduce the negative effects of job stressor fluctuations on job satisfaction.

The lack of research addressing the role of actionable work design characteristics, such as autonomy or skill variety (Hackman & Oldham, 1975), on buffering the effect of job stressor fluctuation and job satisfaction on employee outcomes is surprising, especially considering workers are increasingly required to work under tight deadlines and operate independently (i.e., without much direction; Hulsheger & Shewe, 2011; Kubicek et al., 2015). As previously discussed, expending mental resources to regulate oneself despite rapidly changing job demands triggers a downward spiral of job satisfaction levels (Hobfoll, 1989). While this may be intuitive, the implications for the way work is designed may be more counterintuitive, with mixed empirical evidence for whether traditionally beneficial and motivating work design characteristics (e.g., skill variety, autonomy; Hackman & Oldham, 1975; Ilgen & Hollenbeck, 1991) would buffer or exacerbate the influence of job stressor fluctuations. For example, some research has shown that having too high a level of certain work design characteristics may result in greater emotional exhaustion (Xie & Johns, 1995). For an individual that is already experiencing fluctuating levels of job stressors, additional unpredictability from task and skill variety and additional mental resources allocated for scheduling one's own workflow may hurt more than help.

Further limiting guidance on how to combat the negative influence of job stressor fluctuations is a lack of research utilizing a holistic approach to contextual characteristics of work, with studies typically examining a single work design characteristic in isolation (Fernet et al., 2004). However, in practice, managers and other organizational practitioners do not design work considering using a single work characteristic; nor do employees perceive single characteristics of their job as independent from other characteristics (de Treville & Antonakis, 2006). In addition, considering multiple work design characteristics simultaneously is critical to understanding whether additional forms of job control become sources of job demands, as the mental resources needed to operate independently expand with the scope of the job (Xie & Johns, 1995), leaving fewer available resources to appropriately handle unexpected stressors (Lazarus & Folkman, 1984).

Fortunately, attempts have been made to integrate various approaches to studying how work is designed. Morgeson and Humphrey (2006) developed the Work Design Questionnaire (WDQ) to assess various contextual work features based on a thorough review of the existing work design literature and previous instruments used to assess work design. The resulting scale assesses 21 work characteristics across 4 broad work design domains: 1) task characteristics (e.g., autonomy, skill variety), 2) knowledge characteristics (e.g., job complexity, specialization required), 3) social characteristics (e.g., work interdependence, social support), and 4) the work context (e.g., physical demands, working conditions). The WDQ was designed to incorporate various components of work design that are often examined in isolation into a broader integrative framework. However, many studies continue to examine the dimensions of the WDQ in isolation and through linear relationships with outcomes by either using a single dimension as a moderating variables or by examining the work dimensions' additive effects together in a

multiple regression analysis (Johns, 2018). As mentioned earlier, work design characteristics are not mutually exclusive and can be incorporated simultaneously into the way work is designed. Despite this, there has been very limited research examining the way work is designed with a configural, person-centered (or in this case, work-centered) approach (de Treville & Antonakis, 2006; Fiss, 2007).

A work-centered approach to work characteristics considers the possibility that multiple sub-population of workplaces exist, characterized by different configurations of the work characteristics dimensions (Meyer & Morin, 2016). The configural, work-centered approach contrasts with the more traditional “variable-centered” approach, which assumes all workplaces are drawn from the same population and that the average level for each work characteristic is sufficient to describe that population. Examining work design with a configural approach has numerous benefits to both research and practice by contributing to a typology of work contexts, considering nonlinear relationships between work design characteristics and outcomes, and acknowledging multiple ways work design characteristics operate synergistically to achieve similar outcomes (Johns, 2010, 2018). This allows research to take a holistic view of work design characteristics by examining the full set of characteristics simultaneously rather than in isolation.

Taking a holistic approach to work design characteristics is supported by calls in the literature for organizational research to include more person-centered (i.e., work-centered) approach within study methods (Wang & Hughes, 2011). In addition, a holistic approach to work design characteristics is especially appropriate for research examining the influence job stressor fluctuations and job satisfaction and turnover. In other words, different configurations of work design characteristics may have implications for the extent to which fluctuations in job stressors

result in job dissatisfaction and, in turn, turnover intentions. For example, a review of knowledge work characteristics (Zhan et al., 2013) described knowledge work as being characterized by high levels of independence (i.e., high autonomy, low interdependence), high work complexity, a lack of clarity regarding the results of the work (i.e., low feedback), and various opportunities to cultivate competencies (i.e., high skill variety). In addition, Makarius and Larson (2017) posited organizational support, managerial social support, lower levels of interdependence, and high autonomy as the ideal combination of work characteristics for the rapidly growing virtual workspaces, where fluctuating job stressors (e.g., intermittent workload and ad hoc coworker interactions; Reyt & Wissenfeld, 2015) are common.

Work design characteristics are also a good candidate for a configural approach due to the low intercorrelations found in past studies (Morgeson & Humphrey, 2006). Profiles can vary based on shape (i.e., the pattern of high vs. low mean levels of indicators), elevation (the overall average across the mean scores of indicators), and scatter (the degree of variance across the mean scores of the indicators; Meyer & Morin, 2016). Configural approaches applied to sets of highly correlated constructs are likely to result in configurations, or profiles, that are only distinguished by elevation. However, sets of constructs that have low to moderate intercorrelations (e.g., work design characteristics) are more likely to result in configurations that differentiate from one another across not only elevation, but also shape and pattern. Shape and pattern refer to the qualitative differences across configurations, which better represents the true value of the person-centered approach (Gabriel et al., 2018).

Present Study

Taken together, this study presents a contribution to the research literature by examining the integrative influence of work design characteristic configurations on the interplay between

job stressor fluctuations (in contrast to static job stressor levels), job satisfaction, and turnover intentions. Meta-analytic research has previously identified job stressors as having an indirect influence on turnover intentions through the mediating effects of job attitudes, such as job satisfaction (Podsakoff et al., 2007). However, this research is limited to viewing job stressors as a static, unchanging phenomenon, in contrast to recent research suggesting that fluctuations in job stressors (including traditionally beneficial challenge stressors) may have a negative influence on job satisfaction (Rosen et al., 2020) as well as a direct effect on work outcomes themselves. Thus, it is predicted that:

Hypothesis 1: Job satisfaction will partially mediate the effect of job stressor fluctuations on turnover intentions; job stressor fluctuations will also have a direct effect on turnover intentions.

However, given that job stressor fluctuations are likely an uncontrollable characteristic of modern workplaces, such as within virtual work (Makarius & Larson, 2017) and within knowledge work (Zhan et al., 2013), this study also attempts to provide practical guidance to organizational practitioners by examining the moderating effect of work characteristic configurations. As more workers than ever begin working remotely due to the COVID-19 pandemic, understanding how work characteristics are perceived collectively by remote workers, especially new remote workers, is more important than ever. As discussed previously, research has suggested that high autonomy (Gajendran & Harrison, 2007; Gajendran et al., 2015), low interdependence (Maynard et al., 2012), and social support (Chudoba et al., 2005; Mukherjee et al., 2012) are ideal work characteristics for virtual workers. However, due the massive rapid changes to remote work due to COVID-19 (Kniffin et al., 2020), millions of newly virtual workers must quickly adapt to completing their work in a new setting. While current research has

confirmed the importance autonomy, low interdependence, and social support as being critical to success within remote work during the pandemic (Wang et al., 2020), this research did not examine these work characteristics holistically in a pattern-based approach, nor did the research consider differences between new versus seasoned virtual workers. These considerations could potentially reveal a different story. Therefore, sub-populations of workplaces may resemble the configurations described in Figure 1.

Indeed, based on the transactional model of stressed discussed earlier, the combination of a new working environment, high autonomy, and unfamiliar remote social interactions may instead result in a higher degree of stress responses at work due to mental resources being stretched thin. These configurations also incorporate skill variety, or the extent to which an employee uses several different skills while completing tasks. In a similar vein to the other work characteristics, skill variety may typically break up routine by adding motivating variation to an employee's responsibilities but may create added complexity and unpredictability in a new virtual environment. As a result, the indirect effect of job stressor fluctuations on turnover intentions via job satisfaction may vary as a function of these work design configurations (Figure 1). Therefore, I hypothesize the following moderated mediation model (Figure 2):

Hypothesis 2: The indirect effect of job stressor fluctuations on turnover intentions via job satisfaction will vary conditionally based on work design configuration. Specifically, both the relationship between job stressor fluctuations and job satisfaction and the relationship between job satisfaction and turnover intentions will vary in strength based on work design configuration.

METHOD

Sample

Participants were recruited via Amazon.com's Mechanical Turk. Samples collected on Mechanical Turk have generally been found to be representative of the general working adult population (Cheung et al., 2016; Landers & Behrand, 2015). An initial sample of 840 respondents was collected on Mechanical Turk. A variety of screens were used to define this initial sample: 1) participants must be residing in the United States, 2) work at least 20 hours a week at a paying job, 3) speak English proficiently, and 4) be 18 years or older. Participants were paid \$0.50 for participating in the study.

Additional screens were conducted post hoc to remove potential careless responders (Meade & Craig, 2012). First, an attention check that asked participants to "select 'disagree' to this item" was utilized. This attention check was failed by 179 (21%) respondents, all of whom were removed from the sample. An additional 28 (4%) respondents were removed due to having extremely high even-odd consistency (above 1.5x the interquartile range of even-odd difference values) on the rapid-response measure used in this study (further discussed in the measures section; Meade et al., 2019). The final sample of 633 respondents was slightly more diverse than the overall demographics of the United States with the following demographic breakdown: 52% White/Caucasian, 20% Black/African-American, 19% Asian/Asian-American, 5% Hispanic/Latino, 3% Native American/American Indian, and <1% other. Additionally, the respondents identified 68% as a man and 32% as a woman.

Procedure

After being recruited on Mechanical Turk and agreeing to an informed consent form, participants completed an initial survey that included demographics and employment-based questions along with the job stressor and job stressor fluctuations scale. Next, participants were directed to a separate site where they completed a job satisfaction rapid response measure. Following the job satisfaction measure, participants were re-directed back to a survey that assessed work characteristics and turnover intentions. After completing the survey, participants were debriefed and compensated.

Measures

Virtual Work Status

Participants were asked the following question regarding virtual work: “Are you currently working from home/working remotely?” for which three response options were provided: “No”, “Yes, I have recently started working from home/working remotely for this job”, and “Yes, I usually work from home in this job”. Responses to this question will be coded into two binary indicators: a virtual worker indicator (0 for answering “No”, 1 otherwise) and a new virtual worker indicator (0 for answering “No” or “Yes, I usually work from home”, 1 for answering “Yes, I have recently started working from home/working remotely for this job”).

Job Stressor Fluctuations

Items were adapted from Rodell and Judge’s (2009) measure of job stressors. Four challenge stressor statements (e.g., “My job requires me to work very hard”) and four hinderance stressor statements (e.g., “I have to go through a lot of red tape to get my work done”) were used. For each stressor, respondents were asked to rate how descriptive the statement was of their work on a scale of -2 = “not at all descriptive”, -1 = “only slightly descriptive”, 0 = “somewhat

descriptive”, 1 = “very descriptive”, and 2 = “extremely descriptive”. Following this rating, respondents were presented with their previous rating (e.g., “You indicated that ‘My job requires me to work very hard’ was ‘very descriptive’ of your work”) and then asked to rate how often this changes from day to day on a scale of -2 = “never”, -1 = “rarely”, 0 = “sometimes”, 1 = “often”, and 2 = “constantly”. For each statement where the respondent indicated the stressor was “very descriptive” or “extremely descriptive” and indicated this changed either “often” or “constantly”, the respondent received a score of 1. This scoring method was used to specifically capture high levels of job stressors that also were perceived as constantly changing. High levels of job stressors that change from day to day have been linked to negative employee outcomes (Rosen et al., 2020). Thus, the total score was summed across the eight statements to generate a range of scores from 0 to 8, with 0 representing no fluctuations in job stressors to 8 representing constant fluctuations in job stressors. The Spearman-Brown split-half reliability estimate for this measure was .89.

Job Satisfaction

The Job Satisfaction-Rapid Response Measure (JS-RRM; Wilgus & Meade, 2020) was used to assess job satisfaction. Rapid Response Measurement (RRM; Meade & Pappalardo, 2014; Meade et al., 2020) is a new type of measurement method for assessing constructs such as job satisfaction. The RRM differs from a traditional Likert-type survey measure by presenting scale stimuli, such as adjectives, that can describe an individual’s job with response options “like my job” or “not like my job”. RRM then collects 1) the adjective (e.g., “satisfying”), 2) the response (e.g., “like my” or “not like my job”), and 3) the delay (latency) between when the adjective was presented and when the response was chosen. Thus, the participant quickly makes a binary evaluation of many adjectives by using one of two keys on a keyboard that correspond

to the “like my job” or “not like my job” response options. The JS-RRM measure includes 25 adjectives that can be used to describe a job (e.g., “satisfying,” “boring”). This measure was developed and validated across two independent studies, has demonstrated strong reliability (split-half reliability = .98), and exhibited evidence for convergent validity with strong, significant relationships with existing job satisfaction measures. In addition, the JS-RRM has demonstrated criterion-related validity through significantly predicting self-reported organizational citizenship behavior, counterproductive workplace behavior, and turnover intentions. In the interest of minimizing respondent fatigue and attrition, the JS-RRM was shortened to 10 adjectives in the present study. The Spearman-Brown split-half reliability estimate for this measure was .87.

Work Design Characteristics

Items from the Work Design Questionnaire (WDQ; Morgeson & Humphrey, 2006) were used to assess work characteristics. Autonomy was assessed using three items (e.g., “My job allows me to make my own decisions about how to schedule my work” and “My job allows me to make a lot of decisions on my own”; $\alpha = .78$). Skill variety was assessed with four items (e.g., “The job requires a variety of skills” and “My job requires me to utilize a number of complex or high-level skills”; $\alpha = .78$). Interdependence was assessed using three items (e.g., “My job activities are greatly affected by the work of other people” and “My job cannot be done unless others do their work”; $\alpha = .68$). Finally, social support was assessed with six items (e.g., “People I work with take a personal interest in me” and “I have the chance in my job to get to know other people”; $\alpha = .83$). All items were scored on scale of 1 = “strongly disagree” to 7 = “strongly agree”.

Turnover Intentions

Turnover intentions were assessed with a single item developed by Colarelli (1984), which read “I frequently think of quitting my job” on scale of 1 = “strongly disagree” to 5 = “strongly agree”. An additional item was asked: “Are you planning to quit your job?” on a scale from 1 = “No, I don’t have plans to quit my job” to 5 = “Yes, in 1-2 months”. To assess the average level of turnover intentions indicators, a composite score was created by averaging the two items together. The correlation between the two items was .64, indicating a strong relationship between the two measures of turnover intentions. An overall measurement model of the study indicators was conducted with items loading onto each respective construct (e.g., autonomy work design items loading onto a latent autonomy latent variable) with the two turnover intention items loading onto a single latent variable. This measurement model showed good fit, with $\chi^2 = 561.84$, $p < .001$, CFI = .95, RMSEA = .039 [.035, .044], SRMR = .044 (Hu & Bentler, 1999; Marsh et al., 2004).

Data Analysis

Mediation

To examine whether the effect of job stressor fluctuations on turnover intentions is mediated by job satisfaction, a series of regression models was conducted as suggested by Baron and Kenny (1986). Variables were mean centered prior to analysis, with job satisfaction RRM scores also being converted into a z-score. The first model regressed the dependent variable, turnover intentions, on the independent variable, job stressor fluctuations. The second model regressed the mediator, job satisfaction, on job stressor fluctuations. The third model regressed turnover intentions on both job stressor fluctuations and job satisfaction. The extent to which the effect of job stressor fluctuations on turnover intentions diminishes (or disappears, in the case of

full mediation) in relation to the first model describes the strength of the mediated indirect effect of job satisfaction. Bootstrapping was used to construct a 95% confidence interval of the indirect effect (Preacher & Hayes, 2004).

Latent Class Analysis

Work characteristics configurations were identified via latent class analysis (LCA). LCA is a model-based person-centered approach that attempts to identify distinct classes across a set of categorical variables. A class is characterized by the pattern of conditional probabilities across levels of the categorical or binary variables used within the analysis. In the context of this study, LCA was used to combine responses from both virtual work status indicators, which were binary, along with work characteristics items from the WDQ. LCA has clear advantages over other person-centered approaches. First, in comparison to k-means cluster analysis, LCA accounts for error in classification of profiles (Wang & Hughes, 2011). Second, LCA is a model-based approach to person-centered analysis that attempts to find latent subgroups using a probabilistic model. In other words, LCA is a top-down approach by starting with a set number of classes and fitting the data to a model that describes that number of classes. In contrast, cluster analyses (such as k-means or hierarchical agglomerative) are bottom-up approaches that force each individual into a cluster followed by determining which number of clusters minimizes within-cluster error and best describes the data. In this way, a rough comparison of the differences between LCA and cluster analysis can be drawn between exploratory factor analysis and principal components analysis in the way an exploratory factor analysis (i.e., LCA) takes a model-based approach to identifying underlying dimensions (i.e., classes) in contrast to principal components analysis' (i.e., cluster analysis) straightforward minimization of variance through linear combinations of variables (i.e., clusters).

Despite proposing a four-class solution, I followed best practice recommendations (e.g., Gabriel et al., 2018) and conducted the LCA by first specifying a single latent class and increased the number of classes until the fit to the data no longer improved substantially from adding additional classes. Fit was assessed using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), with lower values indicating better fit. With no clear criteria for LCA fit indices, AIC and BIC was considered holistically to determine the optimal solution. In addition, conformation to the proposed solution and a preference for interpretability was also incorporated to determining the final LCA solution, as previously suggested in past research (Marsh et al., 2009). To incorporate the continuously scored work design items with the binary virtual work indicators, work design subscale scores were dichotomized by coding scores of 5 or above (representing an average response of “Agree” to “Strongly Agree”) as 1, otherwise 0.

Moderated Mediation

After identifying the work design characteristics configurations, the assignment of each individual to a configuration was dummy coded to test the moderating effects of work design characteristic configuration on the indirect effect of job stressor fluctuation on turnover intentions via job satisfaction. To test the extent to which the indirect effects vary across class membership, 95% intervals of the difference in the indirect effect were generated using 1,000 bootstrap samples across each of the dummy-coded class membership indicator (Edwards & Lambert, 2007). As with the mediation analysis, all continuous variables were mean centered prior to analysis. Job satisfaction RRM scores were additionally converted to a z-score.

RESULTS

Descriptive statistics, bivariate correlations, and reliability estimates of study variables are listed in Table 1. As shown in Table 1, job stressor fluctuations exhibited a significant negative correlation with job satisfaction and a significant positive relationship with turnover intentions. Job satisfaction also demonstrated a significant negative relationship with turnover intentions.

Mediation

Hypothesis 1 predicted job satisfaction would partially mediate the relationship between job stressor fluctuations and turnover intentions. The first model in the series of regression models tested the effect of job stressor fluctuations on turnover intentions. The effect of job stressor fluctuations was significant, with $\beta = .25$, $p < .001$. The second model tested the effect of job stressor fluctuations on the mediator, job satisfaction, which was also significant, $\beta = -.07$, $p < .001$. Finally, the third model tested the effect of job stressor fluctuations on turnover intentions while controlling for the effect of job satisfaction ($\beta = -.77$, $p < .001$). The results supported Hypothesis 1 with the coefficient for job stressor fluctuations predicting turnover intentions remaining significant, but diminishing slightly, after job satisfaction was incorporated into the model, with $\beta = .21$, $p < .001$. The bootstrapped results, using 1,000 bootstrapped samples, also show an average direct effect and average indirect effect both being significantly different from zero, further confirming partial mediation (Table 2).

Latent Class Analysis

Table 4 reports the AIC and BIC of the LCA models. Based on my proposed model, I examined a 4-class model. However, models specifying 1 to 5 configurations were also examined. As previously discussed, the process of choosing a model should consider not only the

theoretical conformity of the model, but also the fit indices and a desire for parsimony. A lower AIC and BIC represent a better fitting model. As seen in Table 3, fit indices suggested a 4-class model, in line with the proposed number of configurations. Table 4 shows the average posterior probabilities for class membership for the 4-class model. These average posterior probabilities ranged from .92 to .97, which indicates the resulting classes are clear and distinctive (Morin et al., 2011). Shown in Figure 3, the work design configurations differed slightly from the framework described in Figure 1, with high interdependence existing alongside high levels of the other work design variables, in contrast to low interdependence alongside high levels of the other work design variables. Class 1 represents respondents ($n = 234$) who either work in person or are seasoned virtual workers and report high levels of all work design characteristics. Class 2 represents respondents ($n = 211$) that work virtually, are almost all new to virtual work, and report high levels of all work design characteristics. Class 3 ($n = 103$) represents respondents who work virtually, are new to virtual work, and report lower levels of the work design characteristics. Finally, Class 4 ($n = 85$) represents respondents who are either work in person or are seasoned virtual workers and report lower levels of the work design characteristics.

Moderated Mediation

Hypothesis 2 predicted that the indirect effect of job stressor fluctuations on turnover intentions via job satisfaction would be moderated by work design configuration membership. Table 5 summarizes the interactive effects of class membership with job stressor fluctuations and job satisfaction on turnover intentions. Table 6 summarizes the difference of the indirect effect for each work design configuration compared to the other three work design configurations. The difference of the indirect effect is calculated by subtracting the bootstrapped estimate of the indirect effect for the work design configuration by the bootstrapped estimate of the indirect

effect of the rest of the sample. Thus, positive values indicate the indirect effect is stronger for the specific work design configuration. On the other hand, negative values indicate the indirect is weaker for the specific work design configuration. As seen in Table 5 and 6, Hypothesis 2 was partially supported with the indirect effect being significantly different for Class 2 (High work design characteristics and new virtual workers) and Class 4 (Lower work design characteristics and in person/seasoned virtual workers). Specifically, the indirect effect of job stressor fluctuations via job satisfaction was significantly stronger for respondents in Class 2 and significantly weaker for Class 4, compared to individuals not in these groups.

DISCUSSION

In this study, I first investigated the extent to which job satisfaction mediates the effect of job stressor fluctuations on turnover intentions. Results partially supported this first hypothesis along with past meta-analytic research (Podsakoff et al., 2007), with a significant indirect effect of job stressor fluctuations via job satisfaction. However, the direct effect of job stressor fluctuations was also significant, supporting the importance of considering job stressor pattern instead of the static level of job stressors. In other words, these results suggest that, in contrast to previous research showing the effect static job stressor levels on turnover intentions can be explained by job satisfaction, job stressor patterns (e.g., the extent to which level of job stressors change from day to day) have a significant unique effect on turnover intentions that is not explained by levels of job satisfaction. The unique contribution of job stressor fluctuations beyond job satisfaction also supports past research finding significant direct links between job stressor patterns and employee outcomes (Rosen et al., 2020).

I also examined the extent to which this indirect effect was moderated by work design configuration. My analyses identified four work design configurations: two configurations with

high levels of work design characteristics (one of which was comprised of new virtual workers, the other was comprised of in-person or seasoned virtual workers) and two configurations with lower levels of work design characteristics (one of which was comprised of new virtual workers, the other was comprised of in-person or seasoned virtual workers). The existence of these configurations largely matched proposed configurations based on previous research examining work design characteristics during virtual work (Makarius & Larson, 2017) and, more recently, shifts toward virtual work due to the COVID-19 pandemic (Wang et al., 2020). The one exception to the proposed configurations was regarding interdependence. An “ideal” configuration for typical virtual work would involve high autonomy, social support, skill variety, and low interdependence; however, the configurations identified in the data did not support the existence of this configuration. Instead, high interdependence was found alongside higher levels of other work design characteristics, while lower interdependence was found alongside lower levels of the other work design characteristics. The high/lower pattern of work design configurations was split fairly evenly across new virtual workers and in person/seasoned virtual workers, indicating a lack of association between work design characteristics and virtual work status.

Results supported the basic premise of the transactional model of stress (Lazarus & Folkman, 1984). The additional resources required to handle high autonomy, varied skill usage, and complex, interdependent social interactions become an additional source of stress when combined with working in a new virtual environment, subsequently resulting in lower satisfaction and a higher intention to quit. This also supports research indicating that high levels of some work design characteristics can, at times, become “too much of a good thing” (Xie & Johns, 1995). Indeed, respondents in Class 2 (high work design, new to virtual work) exhibited a

stronger indirect effect of job stressor fluctuations on turnover intentions via job (dis)satisfaction. Furthermore, results also supported findings that high levels of work design characteristics are helpful when employees are not new to working virtually, or are working in person. Specifically, Class 4 (low work design, in person/seasoned virtual workers) exhibited a significantly weaker indirect effect of job stressor fluctuations. Thus, the formation of job dissatisfaction based on job stressor fluctuations, and the subsequent influence of job dissatisfaction on turnover intentions, appears to be dependent on the combination of work design characteristics and experience with virtual work.

Research Implications

This study has several implications for the existing research literature. First, this study adds to the limited amount of research examining job stressor patterns (Rosen et al., 2020), as opposed to static levels of job stressors by examining the extent to which job stressor fluctuations relate to turnover intentions via job satisfaction. In addition, this study adds to the job satisfaction literature by demonstrating the extent to which job stressor fluctuations relate to job satisfaction as an antecedent. This especially has implications for research on job satisfaction trajectories (e.g., Chen et al., 2011) by revealing a potential mechanism for gains or losses in job satisfaction based on the extent to which job stressors regularly fluctuate.

This study contributes a new method of assessing job stressor fluctuations by combining the level of job stressor (e.g., “how descriptive is this of your job?”) with the extent to which that level fluctuates (e.g., “how often does this change from day to day?”). Job stressor fluctuations were then measured as the extent to which job stressor statements are both descriptive of the job and vary across time. This new adapted measure of job stressor fluctuations showed good split-half reliability, explained variance in turnover intentions beyond the effects of job satisfaction,

and provided an operationalization of job stressor fluctuations without the need for longitudinal data collection.

In addition, this study used a new measure of job satisfaction that utilizes rapid response measurement (JS-RRM; Meade et al., 2020; Wilgus & Meade, 2020). This study showed further support for this measure, demonstrating good reliability, even when shortened to 10 adjectives. The study also provided additional evidence of convergent validity, with the JS-RRM scores relating significantly to job stressor fluctuations and turnover intentions.

Finally, this study contributes to calls in research on work design (Johns, 2018) by examining work design characteristics holistically in a configural, pattern-based approach. However, the resulting work design characteristic configurations (not considering differences in virtual work status) did not show extensive variation in shape – the resulting configurations either had all high levels of work characteristics or all low levels of work characteristics. Nevertheless, this study provides an example of how work design can be considered simultaneously alongside other characteristics of the work, such as virtual work status.

Practical Implications

Based on the results of this study, managers and organizational practitioners should consider an employee's experience/comfortability with virtual work when determining the level of complexity and autonomy of the job. In other words, attempting to maintain similar expectations around autonomy, skill variety, interdependence, and social support while moving work into a virtual environment may have unforeseen negative consequences. Virtual workers may benefit from higher levels of structure and less complexity, compared to the typical design of the job, at the outset of virtual work. For example, a newly virtually working employee that typically works independently may benefit from some guidance/structure on when to conduct

certain work activities, what approach to take to accomplish specific goals, etc. – at least when beginning virtual work. Once an employee has adjusted to working virtually, more autonomy can be given.

Limitations and Future Research

As with all research, this study has shortcomings that should be noted. First, this research utilized a binary measure of virtual work status (e.g., “Are you currently working from home/working remotely”) with only two levels of differentiation between newly working remotely (e.g., “Yes, I have recently started working from home/working remotely”) and being a more seasoned virtual worker (e.g., “Yes, I usually work from home in this job”). More variance may exist in the extent employees have experience or familiarity with virtual work than the two levels captured in this study. If a more continuous measure was used, greater diversity in the number and differentiation of latent classes may have been found. Similarly, this study did not consider a preference for, comfort with, or efficacy associated with virtual work. For example, an individual may have recently started working remotely but may have a high preference for remote work, leading to high job satisfaction regardless of work design characteristics. In addition, use of a dichotomous measure prevented the full variance from the continuous work design characteristic scale scores from being captured. Instead, these measures were also dichotomized so that they could be examined alongside the dichotomous virtual work status indicators in the LCA. Future research should attempt to measure all variables continuously so that greater variance can be captured in the way individuals perceive work design characteristics as well as the degree their work is conducted virtually.

Another limitation in this study is the cross-sectional nature of the data collection. While the job stressor fluctuations measure attempted to capture time-based variance by asking how

often the level of each job stressor changes, a longitudinal study where actual within-person variation would be able to track these changes as they actually occur. In addition, a longitudinal study could also assess changes in job satisfaction and any potential autocorrelation between job stressor fluctuations and job satisfaction changes. Furthermore, the passage of time would also provide insights into the point at which being “new” to virtual work “wears off”. In other words, a longitudinal study could examine the shift between latent classes, such as moving to Class 1 (high work design, seasoned virtual worker) from Class 2 (high work design, new to virtual work). Finally, the cross-sectional design of the study, along with the lack of any experimental manipulation of work design and/or level of job stressor fluctuation, prevents any inferences regarding causality between study variables. Thus, this study is limited in only claiming relationships between study variables, instead of causal effects.

Finally, the aim of this study was to focus on actionable situational factors (e.g., work design characteristics) that relate to job satisfaction and turnover intentions. However, there are a number of individual differences that may qualify the results of this study. For example, various personality traits, such as extroversion, conscientiousness, and openness to experience, have been shown to be relevant for success within virtual work (Makarius & Larson, 2017). Furthermore, various relational components between employees and their coworkers/manager, such as leader-member exchange (Graen et al., 1982) may also play an important role in the way work design changes are both perceived and accepted, as well as whether an employee decides to quit (Seo et al., 2018). Future research should aim to examine the role these individual differences and relational characteristics play in how job stressor fluctuations, job satisfaction, and work design all relate to turnover.

Conclusions

In conclusion, research has long examined job stressors, specifically challenge stressors, and work design as beneficial and motivating to the job. However, we now know that considering the extent to which these stressors fluctuate day to day plays an important role in the extent to which they lead to higher motivation and growth or instead, in the case of this study, lead to job dissatisfaction and subsequent turnover. Considering the monumental shift towards virtual work, this appears to especially be the case for the new virtual worker, where traditionally empowering aspects of the job, such as independence and skill variety, instead increase the extent to which job stressor fluctuations lead to job dissatisfaction and turnover intentions. These findings encourage future directions that consider pattern-based approaches to both job stressors and work design to predict, and ultimately prevent, employee turnover.

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APPENDICES

Table 1*Descriptive statistics, reliability estimates, and bivariate correlations.*

Variable	M	SD	1	2	3	4	5	6	7
1 Job Stressor Fluctuations	2.42	2.57	(.89) [†]						
2 Job Satisfaction	659.43	698.94	-.17*	(.87) [†]					
3 Autonomy	5.51	1.02	.26*	.21*	(.78)				
4 Interdependence	5.20	1.06	.36*	-.04	.42*	(.68)			
5 Skill Variety	5.50	.92	.28*	.16*	.56*	.48*	(.78)		
6 Social Support	5.46	.91	.29*	.17*	.66*	.47*	.61*	(.83)	
7 Turnover Intentions	3.37	1.80	.37*	-.48*	-.04	.19*	-.02	-.07	(.78) [†]

Note. Reliability estimates are listed within parentheses along the diagonal. [†]Denotes where Spearman-Brown split-half reliability was calculated. Cronbach's alpha was used for all other scale reliability estimates. * $p < .05$

Table 2

Bootstrapped direct and indirect effect estimates of job stressor fluctuations and job satisfaction on turnover intentions.

Effect	Boot. Estimate	95% CI Lower	95% CI Upper
Average Direct Effect of Job Stressor Fluctuations on Turnover Intentions	.21	.17	.25
Average Indirect Effect of Job Stressor Fluctuations via Job Satisfaction on Turnover Intentions	.05	.03	.07
Total Effect on Turnover Intentions	.26	.22	.30
Proportion of Total Effect on Turnover Intentions Due to Mediation	.20	.12	.27

Note. Bolded values denote confidence intervals that do not cross zero.

Table 3*Latent class analysis fit indices across specified classes.*

Number of classes	AIC	BIC
1	4485.01	4484.71
2	3847.76	3905.84
3	3801.83	3890.84
4	3755.06	3875.22
5	3809.49	3910.74

Table 4

Average posterior probability across predicted class membership.

Class	n	Class 1	Class 2	Class 3	Class 4
1	234	.97	0	0	0.03
2	211	0	.95	.05	0
3	103	0	.05	.95	0
4	85	.08	0	0	.92

Table 5*Moderated mediation regression results predicting turnover intentions.*

Class	Variable	B (SE)	p
Class 1 (High WD, Seasoned Virtual)	JSF	.21*** (.03)	< .001
	JS	-.76*** (.07)	< .001
	Class	.02 (.13)	.86
	JSF*Class	-.01 (.05)	.83
	JS*Class	-.04 (.13)	.74
	Class 2 (High WD, New Virtual)	JSF	.2*** (.03)
Class 2 (High WD, New Virtual)	JS	-.67*** (.07)	< .001
	Class	-.11 (.13)	.37
	JSF*Class	-.01 (.05)	.77
	JS*Class	-.37* (.15)	< .05
Class 3 (Low WD, New Virtual)	JSF	.2*** (.02)	< .001
	JS	-.82*** (.07)	< .001
	Class	.21 (.2)	.28
	JSF*Class	.03 (.1)	.71
	JS*Class	.33* (.16)	< .05
Class 4 (Low WD, Seasoned Virtual)	JSF	.21*** (.02)	< .001
	JS	-.82*** (.07)	< .001
	Class	.22 (.2)	.29
	JSF*Class	-.01 (.1)	.77
	JS*Class	.25 (.15)	.09

Note. WD = Work Design Characteristics, JSF = Job Stressor Fluctuations, JS = Job Satisfaction,
Class = Work Design Configuration Indicator.

*** $p < .001$, * $p < .05$

Table 6*Moderated mediation bootstrapping results.*

Class	Boot Est.	95% CI Lower	95% CI Upper
Class 1 (High WD, Seasoned Virtual)	-.05	-.12	.02
Class 2 (High WD, New Virtual)	.09	.02	.08
Class 3 (Low WD, New Virtual)	-.05	-.12	.01
Class 4 (Low WD, Seasoned Virtual)	-.1	-.18	-.02

Note. WD = Work Design Characteristics. Bolded values denote confidence intervals that do not cross zero.

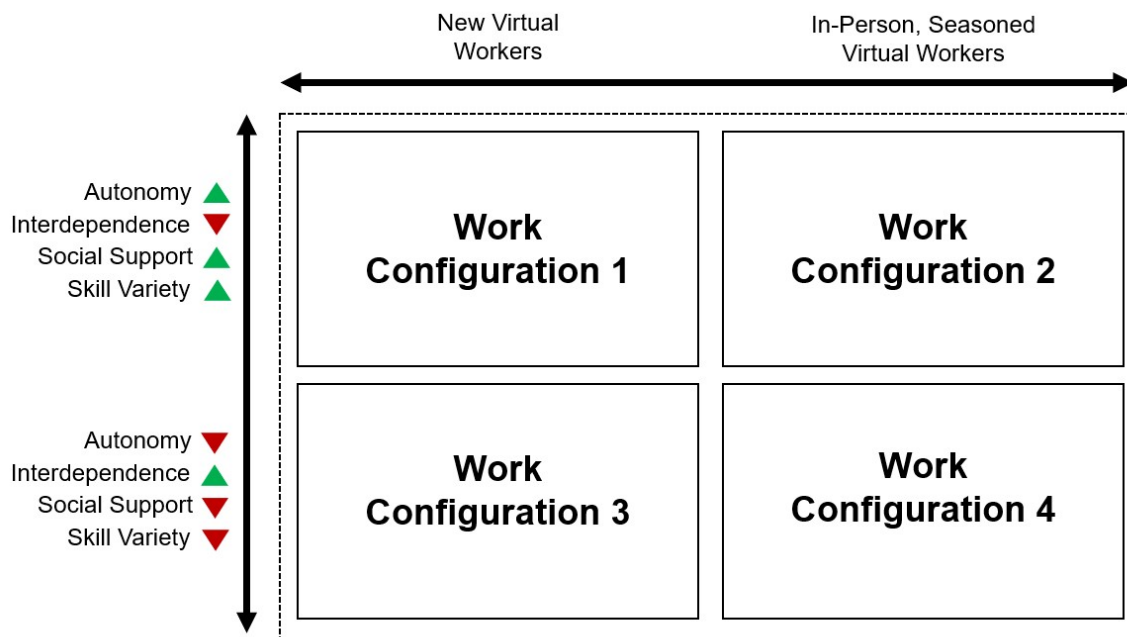
Figure 1*Proposed Work Design Configurations*

Figure 2

Proposed Moderated Mediation Model

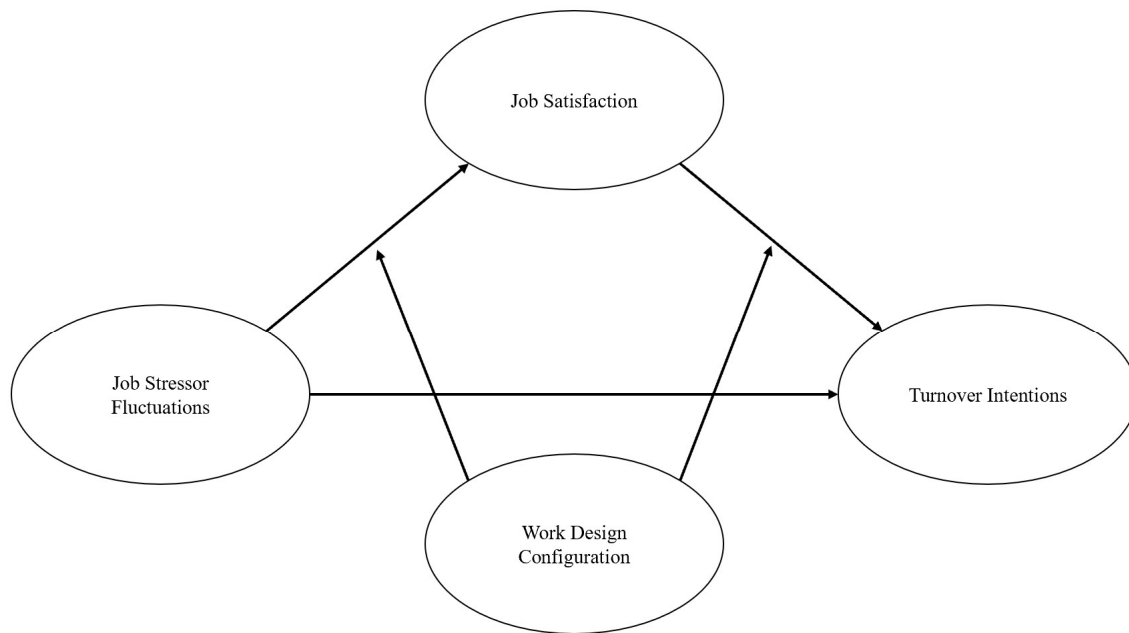


Figure 3

Response probabilities across class.

