

**Challenge and hindrance stressors: The mediating role of resource gain and resource loss  
in stressor appraisals**

by

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## Abstract

The challenge-hindrance stress model has been the topic of significant empirical investigation, recently incorporating stressor appraisals within the framework. The incorporation of stressor appraisals has alleviated recent concerns surrounding the model, and expanded investigation into new areas such as how or when individuals may differ in their appraisals of challenge and hindrance stressors. The current study seeks to advance this line of thinking through examining the mechanisms underlying stressor appraisals, specifically the role of resource gain and resource loss in an individual's stressor appraisals. Towards this endeavor, I conducted two studies, first a content validation study for an adapted measure, followed by a daily diary study for ten weekdays across two weeks. Participants for the daily diary study (Level-1  $N = 105$ , Level-2  $N = 772$ ) were recruited from Prolific and completed two surveys per day investigating the relationship between stressors and stressor appraisals via resource loss and resource gain. Results revealed that resource loss and resource gain mediated three out of the four hypothesized mediated paths. My findings suggest the integration of the challenge-hindrance stress model with Conservation of Resources theory for further research in this area.

## Artificial Intelligence (AI) Use Disclosure Statement

In the preparation of this dissertation, no Artificial Intelligence (AI) tools were used.

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## **Challenge and hindrance stressors: The mediating role of resource gain and resource loss in stressor appraisals**

### **Introduction**

Over the course of the two decades since its inception, the challenge-hindrance stress model proposed by Cavanaugh et al. (2000) has become one of the preeminent stress models within the organizational psychology and management literature (Mazzola & Disselhorst, 2019; Spector, 2019). Drawing from the transactional model of stress (Lazarus & Folkman, 1984), the challenge-hindrance stress model suggests that not all workplace stressors produce distress, instead proposing that some stressors could be motivating and in turn lead to positive outcomes. Cavanaugh and colleagues (2000) dichotomized stressors as being either challenge or hindrance stressors, according to their potential for facilitating or obstructing the accomplishment of work tasks and personal development (Podsakoff et al., 2023).

Within the current framework, hindrance stressors are defined as demands or situations that interfere with an individual's job performance (Cavanaugh et al., 2000; O'Brien & Beehr, 2019; Podsakoff et al., 2023). Challenge stressors, however, are classified as demands or situations that, while strain-inducing, promote the accomplishment of work tasks and personal growth and development (Cavanaugh et al., 2000; O'Brien & Beehr, 2019; Podsakoff et al., 2023). While both challenge and hindrance stressors exhibit positive relationships with strain (Podsakoff et al., 2023), challenge stressors are theorized to have motivational effects, with hindrance stressors lacking this potential and mostly resulting in distress (O'Brien & Beehr, 2019).

Aligning with the typical conceptualization of stressors, hindrance stressors are theorized to be associated with various detrimental outcomes such as decreased job satisfaction and

employee turnover (Abbas & Raja, 2019; Cavanaugh et al., 2000; Podsakoff et al., 2007). Meanwhile, challenge stressors are expected to be associated with beneficial outcomes such as increased job satisfaction and reduced job search behaviors (Cavanaugh et al., 2000; Podsakoff et al., 2007). Since the model's introduction however, researchers investigating the hypothesized relations have found muddled empirical results relating to challenge stressors, with even meta-analyses testing the framework displaying inconsistent findings (Clarke, 2012; LePine et al., 2005; Mazzola & Disselhorst, 2019; Podsakoff et al., 2023; Webster & Adams, 2020). While hindrance stressors have often exhibited the hypothesized relationships with employee outcomes, challenge stressors have displayed nonsignificant effects, or conversely effects in the opposing direction of the model's hypotheses (Clarke, 2012; Mazzola & Disselhorst, 2019; Podsakoff et al., 2023).

Examples of the previously mentioned conflicting findings include challenge stressors exhibiting a nonsignificant relationship with job satisfaction, as well as a near-zero relationship with employee turnover (Mazzola & Disselhorst, 2019). Similarly, other studies show that challenge stressors are both positively (Searle & Lee, 2015; Tadić et al., 2015) and negatively related to work engagement (Min et al., 2015). While some researchers have suggested continued use of the model for the associated theoretical benefits (O'Brien & Beehr, 2019), others have proposed moving away from the model in favor of "other established models and/or a more appraisal-based approach" (Mazzola & Disselhorst, 2019; p. 949).

Recently, literature on the topic has begun to incorporate appraisal-based approaches (Podsakoff et al., 2023; Sawhney et al., 2025), with researchers investigating the role of stressor appraisals impacting stressor – outcome relationships. Currently, the framework classifies stressors a priori as a challenge or hindrance (e.g., workload classified as a challenge stressor,

role ambiguity classified as a hindrance stressor) consistently across individuals (Cavanaugh et al., 2000; Zhang et al., 2014). This present method of classification assumes that both on a within-person and between-person level, individuals are consistently evaluating these stressors (e.g., workload, organizational politics) as challenges or hindrances in line with the model's framework. To illustrate this classification manner, all employees would appraise the stressor of workload as a challenge stressor, across various time points and situational contexts.

With the recent development of evidence that contradicts the model's original tenets, emergent findings have indicated that appraisals of challenge or hindrance stressors can vary on a between- and within-person basis (Ma et al., 2021; Podsakoff et al., 2023; Sawhney et al., 2025). The current study seeks to expand on this line of inquiry by probing why individuals appraise a stressor as a challenge or as a hindrance. Accordingly, I will explore the role that resource loss and resource gain may play in influencing stressor appraisals.

Drawing from the Conservation of Resources (COR; Hobfoll, 1989) model, the present study contributes to the extant literature by explicitly and holistically investigating the role of resource gains and resource losses in influencing stressor appraisals as challenges or hindrances, using an adapted version of the COR-E measure (Hobfoll & Lilly, 1993). The investigation of resource loss (e.g., energy) and resource gain (e.g., skills) as the explanatory mechanism of stressor appraisals has previously included the investigation of a select number of resources or proxies for resource loss and resource gain (e.g., engagement and negative affect), however a comprehensive approach has yet to be seen. Prior research by Kronenwett & Rigotti (2022) examined challenge and hindrance stressors relating to work engagement and negative affect as indicators for well-being (i.e., assumed resource gain would result in beneficial well-being outcomes while assumed resource losses would result in detrimental well-being outcomes).

For the current study, I contribute to the existing theory by embarking on a comprehensive approach which provides a deeper understanding of the appraisal process and how resource loss or gain may fit within the challenge-hindrance stress model (Cavanaugh et al., 2000). Accordingly, the present project will not only provide insight regarding why stressors are appraised in a certain manner (relating to resource gains versus resource loss), but also shed light onto why previous empirical and meta-analytic findings were muddled. The accounting of resource loss and resource gain when investigating challenge and hindrance stressor appraisals may serve to illuminate why previous findings were mixed and guide model refinement and empirical investigation moving forward.

Lastly, the current study advances this area by integrating the challenge-hindrance stress model with Conservation of Resources theory (Hobfoll, 1989; COR). The integration of these two frameworks will allow researchers to further examine why appraisals of challenge and hindrance stressors may vary on a between- and within-person basis. While previous research has investigated the boundary conditions influencing stressor appraisals (Podsakoff et al., 2023; Sawhney et al., 2025), the incorporation of resource losses and gains as an explanatory mechanism will open the gates to further advanced models and topics of investigation within this arena.

### **Theoretical Framework**

The present study employs the Conservation of Resources theory (Hobfoll, 1989) to examine the mediating role of resource loss and gain as mechanisms of challenge and hindrance stressors and their subsequent appraisals. Within this framework, resources are defined as objects, conditions, personal characteristics, and energies that “individuals strive to obtain, retain, foster, and protect (that) they centrally value” (Hobfoll et al., 2018; p. 104). According to

the COR theory, an individual is said to experience stress when central resources are lost, threatened with loss, or when the individual fails to gain central resources after exerting significant effort (Hobfoll et al., 2018). Conversely, an individual is said to experience motivating effects when they are able to protect current resources or secure new resources (Halbesleben et al., 2014).

By definition, stressors are “physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort” (Bakker & Demerouti, 2017; p. 274). According to COR theory, exposure to job stressors is typically associated with resource expenditure (e.g., time or energy loss) given the associated effort inherent in completing these tasks. However, as a result of being exposed to various job stressors, an individual may also potentially gain resources (e.g., improved skills, enhanced self-efficacy). Therefore, job stressors can be associated with both resource loss and resource generation, which can in turn influence employee appraisals of the stressor.

From the lens of COR theory, challenge stressors could be viewed as job stressors wherein an individual perceives a gain in resources after engaging in the associated task(s). For example, while an individual with a high workload will likely experience resource drain (e.g., a loss in energy); the completion of their tasks may give them a sense of resource gain (e.g., enhanced skills within the workplace). Hindrance stressors however, may be appraised as demands where the individual loses resources, or fails to regain resources after engaging in the said task. As an example, an interruption while completing a task consumes resources by forcing the individual to switch tasks, as well as upon resuming the interrupted task (Perry et al., 2023).

Previously, research has supported this line of thinking wherein challenge and hindrance stressors are associated with resource loss and resource gain, although they have primarily been

indirectly examined (i.e., through proxies for resource gains or resource losses). For example, a study by Thuan (2020) found that challenging employees through methods such as intellectual stimulation was associated with subordinate creativity (i.e., a personal resource). Similarly, a study by Rashkovits (2019) revealed that intellectual stimulation was also associated with team learning which could act as a proxy for further resource gain. Meanwhile, in an article by Zhou et al. (2021), hindrance stressors were related to a loss in resilience (i.e., a personal resource), while challenge stressors displayed a positive relationship with resilience. Based on the previous theoretical and empirical rationale, I hypothesize the following:

*Hypothesis 1:* Challenge stressors will be positively related to resource gain.

*Hypothesis 2:* Challenge stressors will be positively related to resource loss.

*Hypothesis 3:* Hindrance stressors will be negatively related to resource gain.

*Hypothesis 4:* Hindrance stressors will be positively related to resource loss.

### **Mediating Role of Resource Loss and Resource Gain**

While research on the factors impacting challenge and hindrance stressor appraisals is still burgeoning (Podsakoff et al., 2023), several areas of importance have been identified which will be briefly discussed here. Podsakoff and colleagues (2023) posit that the factors currently recognized as influencing challenge and hindrance stressor appraisals include individual differences (e.g., self-efficacy, core self-evaluations, and resilience), stressor characteristics (e.g., magnitude or frequency, combinations of challenge and hindrance stressors, and predictability), and contextual factors (e.g., leader behaviors and perceived organizational support). Of note, several of the aforementioned factors influencing appraisals have previously been identified as proxies to an individual's resource loss and resource gain cycles (i.e., occupational self-efficacy

relating to an individual's motivation to attain further resources or prevent resource loss when presented with varying stressors; Du et al., 2023).

Within the current study, I will extend research by examining resource gain as a mechanism between challenge stressors and challenge appraisals, and resource loss as a mediator of hindrance stressors and hindrance appraisal. Challenge stressors have been classified as demands that have the potential to facilitate growth and development (Cavanaugh et al., 2000; O'Brien & Beehr, 2019; Podsakoff et al., 2023) and commonly include workload, time pressure, job complexity, and job responsibility (Podsakoff et al., 2023). The potential for growth and development associated with these stressors is often due to the employees' perception of these demands as opportunities to "learn, achieve, and demonstrate (their) competence" (Crawford et al., 2010; p. 836) which can prompt a motivational response to accomplish the associated goal(s). Upon completion of the relevant job task(s) and the resolution of the associated stressor(s), the focal employee may then perceive a gain in resources (e.g., learning new job-relevant skills). I hypothesize that on days when an employee views a challenge stressor as resulting in resource gains, the individual is then likely to appraise the stressor as a challenge, in line with the model's original tenets. However, on days when an individual perceives a challenge stressor as resulting in resource loss, I anticipate that the stressor is likely to be appraised as a hindrance.

In parallel, hindrance stressors have been defined as stressors that thwart the accomplishment of job tasks or job requirements (Cavanaugh et al., 2000; LePine, 2022; Podsakoff et al., 2023). These stressors include role ambiguity, role conflict, organizational politics, resource inadequacies, administrative hassles, interpersonal conflict, and job insecurity (Podsakoff et al., 2023). Hindrance stressors are often viewed by the individual as obstacles actively interfering with completing the associated job tasks (Crawford et al., 2010).

Accordingly, the individual is likely to expend additional resources to cope with and address these obstacles, without the opportunities for growth and development (i.e., lacking the potential for resource gain) associated with challenge stressors. As such, on days when an employee experiences this resource loss and fails to regain resources, they are likely to appraise these stressors as a hindrance. In the event that resource gain were to occur however (e.g., an individual learns how to more efficiently navigate organizational politics), I would expect the stressor to then be appraised as a challenge on these days.

Given that prior research has demonstrated the potential for challenge stressors to be appraised as both challenges and hindrances (Podsakoff et al., 2023; Sawhney et al., 2025), the current study seeks to provide empirical support for the notion that resource loss and resource gain may underlie these appraisals. Providing initial support towards resource gain being associated with challenge stressor appraisals, recent empirical evidence has found that trust in coworkers (i.e., a conditional resource) positively predicted the appraisal of job demands as challenges (Mockallo & Widerszal-Bazyl, 2021).

In a similar vein, hindrance stressors have also previously been found to be appraised as both challenges and hindrances. As discussed by Maslyn and colleagues (2017), organizational politics can be evaluated as hindrances as organizational politics can create uncertainty in the relationship between performance and promotion (Meurs & Perrewé, 2011). Conversely, organizational politics can be perceived as challenges whereby the political behavior is viewed as an opportunity to learn and develop (Eldor, 2016; Kane-Frieder et al., 2014). In the study mentioned earlier by Mockallo and Widerszal-Bazyl (2021), evidence was similarly found wherein trust in management (a conditional resource) negatively predicted the appraisal of job

demands as hindrances. Based on the previous theoretical and empirical rationale, I hypothesize the following:

*Hypothesis 5:* Resource gain will be positively related to challenge appraisals.

*Hypothesis 6:* Resource loss will be positively related to hindrance appraisals.

*Hypothesis 7:* Resource gain will mediate the relationship between challenge stressors and challenge appraisals.

*Hypothesis 8:* Resource loss will mediate the relationship between challenge stressors and hindrance appraisals.

*Hypothesis 9:* Resource gain will mediate the relationship between hindrance stressors and challenge appraisals.

*Hypothesis 10:* Resource loss will mediate the relationship between hindrance stressors and hindrance appraisals.

## **Overview of Study 1 and Study 2**

In order to evaluate the resource loss and resource gain experienced by employees during the workday, I adapted the *Conservation of Resources Evaluation (COR-E)* measure created by Hobfoll et al. (1992). The COR-E measure was developed through group processes and while it should not be considered complete, the list is presented as comprehensive (Hobfoll & Lilly, 1993) for examining an individual's resources. The measure includes 74 items, one item for each resource and covers object resources, condition resources, personal resources, and energy resources. Given that the COR-E measure includes resources that fall outside the work domain (e.g., a good relationship with my children), as well as resources that may not exhibit significant short-term variation (e.g., financial stability), the focal study will not make use of the full 74-

item measure. Instead, I first created a shortened COR-E measure and examine its content validity (Study 1) before use in the focal study (Study 2).

### **Study 1 Methods (Content Validation Study)**

The initial study examining the content validity of a shortened COR-E measure was comprised of several steps, including: item revision, content validation, and item reduction, with ten Subject Matter Experts (SME's; a sample of graduate students) recruited to assist in this process. As discussed by Colquitt et al. (2019) and Schriesheim et al. (1993), using student samples for this step is appropriate for evaluation, as they can be assumed to have the intellectual ability required for assessing the correspondence between items and the presented conceptual definitions.

### **Study 1 Item Generation Procedure**

The items from the original COR-E measure used to create the shortened scale were informed by the primary author, in consultation with their advisor. The criteria for inclusion was whether the items reflect resources that can be gained or lost in the workplace, as well as whether they may exhibit short-term variability (e.g., whether the resource is likely to fluctuate during a workday). Any items that were ambiguous and unable to be immediately classified were also included in the initial item pool for the shortened measure, and able to be eliminated as needed, according to the final results. Following this process, the original 74 item COR-E measure was reduced to 48 items to then be evaluated by the SMEs before use in the focal study (Study 2).

### **Study 1 Sample**

The sample was comprised of ten graduate students from Auburn University's Industrial and Organizational Psychology Program. From this subject pool, the sample of graduate students were recruited to serve as subject matter experts (SMEs) in evaluating the content validity of the

shortened COR-E measure through a q-sort task. The q-sort task followed the approach set by Anderson and Gerbing (1991), with the evaluation of the results following the evaluation criteria recommended by Colquitt et al. (2019).

### **Study 1 Procedure and Evaluation Guidelines**

For the first step towards evaluating content validity, the sample engaged in a Q-sort task (Anderson & Gerbing, 1991) where the SME's were presented with the definitions of the four types of resources from COR theory (object, condition, personal, and energy resources; Hobfoll & Schumm, 2009). They were then presented with the shortened COR-E measure of randomly ordered items and asked to read each item before then sorting the items into the resource type that best fits each item.

The evaluation criteria for this approach include two indices: the proportion of substantive agreement ( $p_{sa}$ ) and the substantive-validity coefficient ( $c_{sv}$ ) which correspond to indicators of definitional correspondence and definitional distinctiveness, respectively, as discussed by Colquitt et al. (2019). Definitional correspondence indicates the degree to which the scale's items correspond to the construct's definition, while definitional distinctiveness reflects the degree to which a scale's items correspond to the focal construct's definition over other constructs.

The  $p_{sa}$  reflects the number of judges who accurately sorted the item compared to the total number of judges, with the statistic ranging from a value of 0 to 1 (with 1 indicating 100% of the judges sorted the item to the intended construct). The  $c_{sv}$  however, reflects the number of judges who accurately sorted the item, taking into account any times when the item was sorted into other constructs. The range for the  $c_{sv}$  goes from -1 to 1, with the former indicating no judges accurately sorted the item, and the latter indicating all judges accurately sorted the item.

The evaluation criteria for  $p_{sa}$  values as recommended by Colquitt et al. (2019) include the following: very strong (.91 and above), strong (.82 to .91), moderate (.72 to .81), weak (.39 to .71), and lacking (.38 and below). Meanwhile, the evaluation criteria for  $c_{sv}$  values range from: very strong (.81 and above), strong (.61 to .80), moderate (.51 to .60), weak (.05 to .50), and lacking (.04 and below). Based on the evaluation criteria, any items classified as weak or lacking for  $p_{sa}$  or  $c_{sv}$  statistics were removed from the adapted COR-E measure.

### **Study 1 Results**

Based on the aforementioned guidelines, the 48 items were evaluated regarding their content validity prior to potential use in the focal study (Study 2). Based on the two indices put forth by Colquitt et al. (2019), 17 items were retained for inclusion in the focal study, with 31 items removed from the item pool. Items were removed if they did not display moderate ratings or above of  $p_{sa}$  and  $c_{sv}$  (i.e., items ratings of weak or lacking). Of the four resource types (object, condition, personal, and energy), one item from object resources, four items from condition resources, eleven items from personal resources, and one item from energy resources were included in the final measure (see Table 1).

### **Study 2 Methods (Daily Diary Study)**

For the current (focal) study, 472 participants were recruited on the Prolific crowdfunding platform to participate in a qualification survey to determine eligibility for participating in the daily diary study. The qualification survey included items for respondents to indicate their employment status outside of crowdsourcing platforms (full- or part-time employment), interest in participation in the full study, availability for the duration of the study period (i.e., to ensure participants are not on vacation during the study period), and available periods for survey administration in the workplace (i.e., when they typically started and

concluded their workday, as well as when they went to bed each day). Additionally, participants were asked to detail their current time zone, which was verified using a data quality tool called ResponsePie (2025; <https://www.responsepie.com>). The tool verified participants' time zones as well as checked for VPN usage to ensure participants were located within the contiguous United States, where data collection efforts were concentrated. The tool also identified potentially suspicious behaviors, such as the number of times participants switched tabs and when they copy and pasted responses into the survey.

From this sample, 252 participants were excluded from further participation based on not meeting study qualification material (e.g., participants outside the U.S., working less than 30 hours per week, unable to complete surveys within the daily survey period, or were identified as suspicious based on the indicators provided by ResponsePie), leaving a sample of 220 participants to participate in the Time 1 survey which largely captured demographic and personality variables. The Time 1 survey was sent out on Monday, the week after the qualification survey was initially sent out. Of the initial 220 participants, a group of 185 participants completed the Time 1 survey, and after removing participants who failed attention / quality checks, 164 participants were invited to participate in the daily survey period. The daily diary survey period began the week following the Time 1 survey. During this daily diary survey period, participants were asked to complete two survey per weekday (Monday – Friday) for ten weekdays over two consecutive work weeks. Based on the information collected in the qualification survey, the survey administration times were tailored to each participant and their respective time zone, with survey links being open for two hours for the participants to complete before the surveys were closed.

In line with literature on ESM studies, participants who complete less than 3 days of daily surveys were excluded from data analysis (Singer & Willett, 2003; Trougakos et al., 2014). After cleaning the data in preparation for analysis, the sample was further narrowed down to a size of (*N*) 105 participants who completed at least three full days (both the afternoon and the evening survey) of data. Of note, the participant make-up was such that participants on average completed 7.45 full days of data, indicating a generally responsive participative group.

The demographics of the group were such that 50.48% were male, 47.60% were female, and 1.90% were non-binary or preferred not to say. The participants within the sample were further characterized as being primarily made up of Caucasian (73.33%), followed by Asian / Pacific Islander (8.57%), African American (5.71%), Hispanic / Latino (4.76%), and multiracial descent (7.62%). The average age of the participants was 41.10 years (*SD* = 12.58). In terms of education, 7.62% of the participants completed their GED / were at high school proficiency; 12.38% had some college education; 9.52% obtained an associate's degree; 39.05% had obtained a bachelor's degree; 5.71% had some post graduate education without an advanced degree; and 25.71% held an advanced degree (e.g., MS, MA, PhD) indicating a fairly educated sample. The average job tenure of the participants was 8.45 years, with an average organizational tenure of 8.74 years. Regarding working in office versus remotely, participants on average worked 17.01 hours per week remotely and 24.12 hours per week in the office.

## **Study 2 Measures**

Challenge and hindrance stressors were measured in the afternoon survey, with resource gains, resource losses, and stressor appraisals measured in the evening survey.

**Daily challenge and hindrance stressors.** Challenge and hindrance stressors were measured using the challenge and hindrance stressor scale by Zhang et al. (2014). The scale

includes thirteen items for the two subscales, with six items measuring challenge stressors and seven items measuring hindrance stressors. A sample item for challenge stressors is: “So far today, I had to complete a lot of hard work”, with a sample for hindrance stressors being: “So far today, I had to deal with administrative hassles”. Previously the alpha values for the challenge and hindrance stressor scales were reported as .82 and .88 (Zhang et al., 2014). The reliabilities for the current study were such that Cronbach’s alpha for the challenge stressor scale ranged from .85 to .92, while the alpha ranged from .75 to .89 for the hindrance stressor scale. Each item was rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree).

**Resource gains and resources losses.** Resource gains and resource losses were measured using the shortened 17 item COR-E measure, adapted from Hobfoll & Lilly (1993). An example item for the scale will be: “For each item, please rate the extent to which you felt you have gained (lost) any of the following at work today...understanding from my employer / boss”. Each item will be evaluated twice, with an evaluation to account for resource gains, and an evaluation to account for resource losses. All items were rated on a 6-point scale, with the following as the scale for resource gains: (1) Definitely did not gain, (2) likely did not gain, (3) probably did not gain, (4) probably gained, (5) likely gained, and (6) definitely gained. Similarly, resource loss was rated on a 6-point scale as follows: (1) Definitely did not lose, (2) likely did not lose, (3) probably did not lose, (4) probably lost, (5) likely lost, and (6) definitely lost.

**Daily challenge stressor appraisal.** Challenge stressor appraisals were measured with three items from LePine et al. (2016). A sample item for the scale is: “Today, I felt the demands of my job challenge me to achieve personal goals and accomplishment”. The items were rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). The reliabilities for the current

study were that the Cronbach's alpha for challenge appraisals ranged from .94 to .98 across the study period.

**Daily hindrance stressor appraisal.** Hindrance stressor appraisals were also measured with three items from LePine et al. (2016). A sample item for the scale is: "Today, I felt the demands of my job constrain my achievement of personal goals and development". The items were rated on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Cronbach's alpha for hindrance appraisals for the current study ranged from .96 to .99 across the 10-day study period.

## **Study 2 Analytic Strategy**

Given the study employed a daily diary design with participants completing two surveys per day across a 10-day period, multilevel modeling was used to test my hypotheses. The data was such that the final sample was comprised of 772 observations (survey responses) at Level-1, from 105 participants at Level-2. Prior to testing my hypotheses, I calculated the Intraclass Correlation (ICC) values for the variables within the study, in order to satisfy the assumptions requisite for using multilevel modeling (dependence of observations). Table 2 displays the results of these calculations, with the ICC values ranging from .55 to .80, indicating that between 55% and 80% of the variance was between-person variance, and 20% to 45% of the variance was due to within-person variance. These results satisfied the assumptions necessary to then proceed with multilevel modeling for hypothesis testing.

Proceeding with hypothesis testing, I employed Bayesian estimation given the complexity of the current study's mediation models. Bayesian estimation is able to create credible confidence intervals for estimating indirect effects for complex mediation models, with multilevel models being one such case (Yuan & McKinnon, 2009). Additionally, in comparison

to using maximum likelihood estimators, the benefits of using Bayesian analyses are such that they do not rely on normality assumptions and “allow for more straightforward and exact inferences” (Sawhney et al., 2025; Sawyer et al., 2022, p. 249).

The current study tested two models (Figure 1 and Figure 2), exploring challenge and hindrance stressors separately. One model (Figure 1) explored the relationship between challenge stressors and their appraisals (challenge and hindrance), via resource gain and resource loss. While the other model (Figure 2) examined the relationship between hindrance stressors with their appraisals (challenge and hindrance), via resource gain and resource loss. In these models, resource gain was regressed on the stressor (Path 1A), with challenge appraisals regressed on resource gain (Path 1B). Similarly, resource loss was regressed on the stressor (Path 2A), while hindrance appraisals were regressed on resource loss (Path 2B). As discussed earlier, Bayes estimation was utilized in the analyses, using 10,000 iterations to test the indirect effects within the two models.

### **Study 2 Construct Validity**

Prior to testing my hypotheses, I first sought to demonstrate discriminant validity for the measures within the current study. To do so, I conducted Multilevel Confirmatory Factor Analyses (MCFA), where I compared the fit of two competing models: a two-factor model (challenge stressors and hindrance stressors as separate factors) and a one-factor model (challenge and hindrance stressors loaded on a single factor). Given the resource loss and resource gains measure was formative, the analyses focused on the challenge and hindrance stressor scales.

For these analyses, item parceling was conducted, based on the recommendations set by Little et al. (2002). For the current study the 6-item challenge stressor scale was converted to

three parcels with each parcel averaging two items, and the 7-item hindrance stressor scale was also converted to three parcels comprised of two parcels averaging two items and one parcel averaging three items. Model fit for the current analyses was assessed using several goodness-of-fit indices, including the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), chi-square tests, Akaike Information Criterion (AIC), and the Bayesian Information Criterion (BIC).

The standards for these indices are such that RMSEA values between .06 and .08 demonstrate acceptable fit, while values below .05 represent good fit (Byrne, 2013; Kline, 2005; Vandenberg & Lance, 2000). For CFI, values greater than or equal to .90 are considered acceptable, while values greater than or equal to .95 are indicative of good fit (Hu & Bentler, 1999; Kline, 2005). Model comparisons were performed using Chi-square tests (Cheung & Rensvold, 2002), alongside comparing AIC and BIC values wherein lower AIC and BIC values correspond to superior model fit (DiStefano, 2016; Ene, 2020; Hox et al., 2017).

As evaluated by the aforementioned evaluation criteria, the two-factor model demonstrated superior fit in comparison to the one-factor model. As seen in Table 3, the two-factor model exhibited good fit  $\chi^2(16) = 16.488$ , CFI = 1.00, RMSEA = .007, held the lower AIC and BIC values, and a Satorra-Bentler Chi-Square Difference test found the model to demonstrate significant model fit improvement compared to the one-factor model.

## **Study 2 Hypothesis Tests**

Table 2 displays the means, standard deviations, reliabilities, and within- and between-person correlations for the variables included in the current study. The correlations found were such that at the within-person level (day-level) challenge stressors exhibited a positive association with resource gain ( $r = .12, p < .01$ ) and challenge appraisals ( $r = .12, p < .01$ ), and

non-significant relationships with resource loss ( $r = .03, ns$ ) and hindrance appraisals ( $r = .03, ns$ ) were observed. Meanwhile hindrance stressors at the day-level displayed a positive association with resource loss ( $r = .15, p < .01$ ), and a negative relationship with challenge appraisals ( $r = -.13, p < .01$ ), but had non-significant relationships with resource gain ( $r = -.09, ns$ ) and hindrance appraisals ( $r = .10, ns$ ).

For the current study, Hypothesis 1 stated that daily challenge stressors would be positively related to daily resource gain. As can be seen in Table 4, analyses revealed a positive relationship between challenge stressors and resource gain ( $\gamma = .07, SE = .02, p < .05$ ), indicating that Hypothesis 1 was supported. Hypothesis 2 similarly stated that daily challenge stressors would be positively related to daily resource loss. The results, however, displayed no relationship between challenge stressors and resource loss ( $\gamma = .02, SE = .02, ns$ ), indicating that Hypothesis 2 was not supported.

Hypotheses 3 and 4 examined the relationships of daily hindrance stressors with daily resource gain and resource loss. Hypothesis 3 predicted that hindrance stressors would be negatively related to resource gain. Analyses revealed a significant, negative relationship between hindrance stressors and resource gain ( $\gamma = -.09, SE = .04, p < .05$ ), supporting Hypothesis 3. Hypothesis 4 proposed a positive relationship between hindrance stressors and resource loss, with the analyses displaying a significant positive relationship ( $\gamma = .15, SE = .04, p < .05$ ), supporting Hypothesis 4.

Hypothesis 5 stated that daily resource gain will be positively related to daily challenge appraisals. As Table 4a and 4b shows, resource gain displayed a positive relationship with challenge appraisals across challenge stressors ( $\gamma = .65, SE = .05, p < .05$ ) and hindrance stressors ( $\gamma = .66, SE = .05, p < .05$ ). As such, Hypothesis 5 was supported. Hypothesis 6

meanwhile predicted that daily resource loss will be positively related to daily hindrance appraisals. The results supported the hypothesis such that resource loss displayed a positive relationship with hindrance appraisals for both challenge ( $\gamma = .56, SE = .07, p < .05$ ) and hindrance stressors ( $\gamma = .55, SE = .07, p < .05$ ).

Hypotheses 7 and 8 investigated the role of daily resource gains and losses in mediating the relationship between daily challenge stressors and their appraisals as a challenge or hindrance. Hypothesis 7 predicted that resource gain would mediate the relationship between challenge stressors with challenge stressor appraisals. The findings were such that a positive, significant indirect effect was found between challenge stressors and challenge appraisals, via resource gain ( $\gamma = .04, SE = .02, p < .05, 95\% CI [.016, .073]$ ), supporting Hypothesis 7. Meanwhile, Hypothesis 8 stated that resource loss would mediate the relationship between challenge stressors and hindrance appraisals. Unfortunately, a non-significant indirect effect was observed between challenge stressors and their hindrance appraisals, via resource loss ( $\gamma = .01, SE = .01, ns, 95\% CI [-.014, .032]$ ). These findings ultimately did not support Hypothesis 8.

Lastly, Hypotheses 9 and 10 examined the role of daily resource gains and losses in mediating the relationship between daily hindrance stressors and their appraisals as a challenge or hindrance. Hypothesis 9 proposed that resource gain will mediate the relationship between hindrance stressors with challenge appraisals. The results were such that a negative indirect effect was observed between hindrance stressors and challenge appraisals via resource gain, such that Hypothesis 9 was supported ( $\gamma = -.06, SE = .03, p < .05, 95\% CI [-.117, -.009]$ ). Similarly, Hypothesis 10 predicted that resource loss would mediate the relationship between hindrance stressors with hindrance appraisals. Echoing earlier findings, a significant, positive indirect effect

was found between hindrance stressors and hindrance appraisals via resource loss ( $\gamma = .08$ ,  $SE = .02$ ,  $p < .05$ , 95% CI [.038, .130]), lending support to Hypothesis 10.

## **General Discussion**

Previous meta-analyses have noted that while hindrance stressors consistently exhibit the expected effects with outcomes of interest, challenge stressors often display mixed findings, with some studies finding non-significant results, or results in the opposing direction from hypotheses (Mazzola & Disselhorst, 2019; Webster & Adams, 2020). These conflicting findings have motivated researchers to examine stressor appraisals of challenge and hindrance stressors to account for these findings, now allowing for circumstances wherein challenge stressors may be appraised as a challenge or hindrance. These additions have largely been adopted, with several factors impacting stressor appraisals having been identified as moderators (i.e., individual differences, stressor characteristics, and contextual variables; Podsakoff et al., 2023). These studies have thus far identified some of the factors that may influence how or when stressors are appraised contrary to expectations (Podsakoff et al., 2023; Sawhney et al., 2025). The current study contributes to this line of thinking by advancing the notion that resource loss and resource gain may serve as mechanisms underlying challenge and hindrance stressors and their respective appraisals.

The present study largely found that the hypothesized direct and indirect effects between challenge and hindrance stressors with challenge and hindrance appraisals via resource gain and resource loss were supported, lending credence to the integration of conservation of resources theory with the challenge-hindrance stress model (Cavanaugh et al., 2000; Podsakoff et al., 2007). As can be seen in the supplemental analyses materials (Tables 5a. through 5d.), the hypothesized relationships continue to hold when parsed to examine the simultaneous effects of

resource gain and resource loss on singular appraisals (i.e., challenge stressor → challenge appraisal; challenge stressor → hindrance appraisal; hindrance stressor → challenge appraisal; hindrance stressor → hindrance appraisal). Taken in conjunction, these findings illustrate the importance of incorporating resource loss and resource gain in future research investigating challenge and hindrance stressors and their appraisals.

The findings also indicated that challenge and hindrance stressors largely exhibit significant relationships with resource gain and resource loss, in line with the study hypotheses. Specifically, hindrance stressors displayed a negative relationship with resource gain, which is consistent with their conceptualization as demands that impede the accomplishment of job tasks or job requirements (Cavanaugh et al., 2000; LePine, 2022; Podsakoff et al., 2023). Contrary to challenge stressors, hindrance stressors are characterized as lacking the growth and development opportunities which would likely result in resource gain. Similarly, hindrance stressors also demonstrated a positive relationship with resource loss, in line with the challenge-hindrance stress model (Cavanaugh et al., 2000; Podsakoff et al., 2007) wherein individuals likely need to expend additional resources to cope with or address these demands that interfere with completing job tasks. Consequently, the individual is more likely to have experienced significant resource loss upon completion of their job tasks.

Additionally, the current study found that challenge stressors positively related to resource gain, while displaying no relationship with resource loss. These findings partially align with previous expectations whereby challenge stressors are distinguished as job demands that have the potential to facilitate employee growth and development (Cavanaugh et al., 2000; O'Brien & Beehr, 2019; Podsakoff et al., 2023). As displayed in the current study, upon engaging with challenge stressors (e.g., high levels of responsibility), participants were likely to

experience resource gain (e.g., increased positive attitudes towards their role as a leader), the demands thus serving as a springboard for the participant to expand their resource pool. Contrary to hypotheses, however, challenge stressors did not display a significant relationship with resource loss. Given that engaging with challenge stressors necessitates the expenditure of resources (e.g., time, effort), the relationship between challenge stressors and resource loss was quite surprising. The lack of findings may be due to the nature of the resources lost versus resources gained.

Within COR theory, as discussed by Ten Brummelhuis and Bakker (2012), resource types can be categorized across several dimensions (Hobfoll, 2002), with one area of note being the extent to which the resources are volatile (short-term) or structural (long-term). Volatile resources are a type for which the resources may be single use, wherein upon use they cannot be re-used (i.e., time), or they can be temporal, fleeting, such as an individual's mood or attention (Ten Brummelhuis & Bakker, 2012). Meanwhile, structural resources are durable by nature and tend to remain stable across time. Structural resources previously found (Airila et al., 2014; Hobfoll et al., 2018) have included workplace relationships (i.e., supervisor and coworker relations), task resources, and personal resources (self-esteem), which were found to exhibit long-term (across 10 years) effects on engagement and ability to perform their work. Examining the results of the current study, it might be such that when engaging with challenge stressors, daily resource gain may perhaps be more salient than daily resource loss, as individuals are effectively trading in, or expending, volatile resources (time, energy, etc.) in exchange for more durable, structural resources.

### **Theoretical and Practical Implications**

The current study made several key contributions to the extant workplace stress literature. Of note, resource gain and resource loss displayed significant, positive direct effects towards challenge and hindrance appraisals respectively, supporting the concerns brought forth by Mazzola & Disselhorst (2019) that the original a priori classifications of challenge and hindrance stressors likely need to account for appraisals. While the broader challenge and literature (Podsakoff et al., 2023) has started to acknowledge the role of appraisals within the challenge-hindrance stress model (Cavanaugh et al., 2000), the current study establishes the role of resource gain and resource loss within the workplace as a mediator that influences these appraisals.

Additionally, the study advances our current understanding through identifying and exploring the mechanisms underlying the relationship between stressors and stressor appraisals. Much of the previous literature within this domain has thus far focused on exploring the direct effects, while the present study examined the process through which stressors relate to stressor appraisals. Specifically, we found that challenge stressors related to enhanced resource gain, while hindrance stressors exhibited reduced resource gain and increased resource loss. As a result, challenge stressors increased challenge appraisals through greater resource gain, meanwhile hindrance stressors reduced challenge appraisals via reduced resource gain and increased hindrance appraisals through greater resource loss.

The current study delved into the short-term relationships among challenge and hindrance stressors with their appraisals via resource gain and loss, ultimately finding that challenge stressors displayed no relationship with resource loss, against expectations. These findings helped set the stage for future research in this area to probe these relationships in the long-term to facilitate greater understanding of these processes. As was discussed earlier, daily challenge

stressors did not display a significant relationship with resource loss, contrary to expectations, which may have been caused by the perceived gain of structural resources offsetting the loss of more volatile resources. Future research could benefit from exploring this further to examine if this pattern holds across longer periods of time, or whether long-term resource loss will offset the perceived resource gain, resulting in the individual being more likely to associate the challenge stressor(s) with resource loss.

COR theory (Hobfoll et al., 2018) currently accounts for timing in regards to how stressful conditions are not events, but instead sequences; with recent research starting to investigate the role of recovery periods for individuals to regain resources, and resource availability relative to a loss in resources. In contrast, as identified by Podsakoff et al. (2023), a significant portion of studies utilizing the challenge-hindrance stress model employ between-person or cross-sectional designs, leading to a relative dearth of research investigating the effects of challenge and hindrance stressors across time.

Recently, the literature regarding the role of timing and sequences when investigating challenge and hindrance stressors has started to accelerate, with a recent study by Rosen et al. (2020) exploring challenge stressor variability across time. Their results found that stressor variability (stability) can result in negative (positive) indirect effects on employee performance and well-being outcomes. Taken in conjunction with the findings of the current study, the variability (stability) of stressors experienced likely can have severe impacts towards an individual's resource losses and gains. As discussed in COR theory's corollaries (Hobfoll et al., 2018), individuals can experience resource loss cycles and resource gain spirals, dependent on the patterns of resource loss and gain experienced. The variability (stability) of the stressors experienced are likely to influence these loss cycles and gain spirals, and likewise future research

would likely benefit from the integration of both areas of study in order to better understand sequences that may inhibit or facilitate resource loss and resource gain and their subsequent effects on stressor appraisals.

On the practical side, the current study serves to guide organizations through a potential mediating mechanism to offset the detrimental outcomes that are commonly associated with hindrance stressors. The results found within the study were such that when resource gain occurred, the participants were more likely to appraise both challenge and hindrance stressors as a challenge, and such that when resource loss occurred, the individuals were more likely to appraise hindrance stressors as a hindrance. Given the detrimental employee outcomes associated with hindrance appraisals, organizations could potentially subvert these outcomes through the provision of resources to help facilitate employee growth and development. These provisions could range from ensuring employees have all the necessary tools required to perform their job tasks, to providing opportunities for the employees to advance their training or education.

While targeting employee growth and development will likely be individualized, the provision of resources can be executed on a more general basis. One area for potential implementation would be the provision of short-term resources such as supervisor feedback. When individuals are facing challenge or hindrance stressors and receive feedback, this can help facilitate the completion of the associated job task(s), potentially reducing resources spent (e.g., time and energy) on unnecessary tasks and providing clarity towards any errors or confusion the individual may have faced when addressing the stressors.

While the provision of resources are likely to aid towards offsetting resource losses, organizations would do well to monitor and evaluate the effects of implemented programs in order to verify their positive effects and continue to do so across time. Workplaces often

experience subtle and significant changes over time, and as such the provided resources likely need to change over time as well. To illustrate, just within the past few years, the U.S. labor market experienced significant change in what was dubbed “the great resignation” wherein there was significant job turnover within the U.S. in the face of the COVID-19 pandemic, and general employee dissatisfaction (Parker, 2022). Organizations consequently were forced to adapt to these new labor conditions through employment benefits and resources offered to individuals in order to retain talent. Similarly, while facing the COVID-19 pandemic, many workers shifted to remote work status; and in the years following, some companies have since started to shift towards return-to-work mandates and policies (McPhail et al., 2024). As the workplace continues to change over time, the resources organizations provide to support their employees will likely need to change as well, and as such should be evaluated consistently in order to maximize their effectiveness over time.

### **Limitations and Future Directions**

There are several limitations within the current study that need to be addressed. First, the present study measured challenge and hindrance stressors mid-day, and accordingly I was unable to know if the participants continued to experience these stressors throughout the day and likewise how this may have impacted the remaining variables of interest. This was done within the current study in order to provide temporal separation between our variables of interest, however future research could remedy this issue through capturing stressor levels at multiple time points throughout the day in order to account for the stressors experienced.

Another limitation of the current study relates to a lack of foresight regarding participants’ experiences prior to the focal study. While the project captured daily diary data across a 10-day period, the current study did not account for the level of resource loss and

resource gain the participants experienced prior to the study, both in the immediate and more distal past. Within COR theory, there are two key principles relating to this issue (Hobfoll et al., 2018). First, the primacy of loss principle states that “resource loss is disproportionately more salient than resource gain (Hobfoll et al., 2018, p. 106), while the gain paradox principle puts forth that resource gain becomes more salient when the individual is facing increased resource loss. Future studies accordingly should capture the participants’ resource loss and gain experiences prior to the start of the study, in order to account for any potential moderating effects. If participants face significant resource loss prior to study, this likely would affect their perceptions of resource gain within the study period, which was not accounted for in the present study.

One topic of note for future investigation regards how the resources themselves are evaluated by individuals. The basic tenet of COR theory (Hobfoll, 1989; Hobfoll et al., 2018) is such that individuals seek to obtain and retain things they value (resources). In recent years, this definition of resources has drawn criticism given how all-encompassing this definition is to include anything an individual values (Halbesleben et al., 2014; Hobfoll et al., 2018). As a consequence, researchers have instead shifted towards defining resources relative to their value in terms of helping the individual accomplish their goals (Halbesleben et al., 2014). While theorizing on this topic is still ongoing, one avenue of research that may yield results is related to resource valuation across individuals, and whether there may be patterns, or profiles of such. For example, there may be some individuals who value conditional resources (e.g., social support) more highly than energy resources, or there may be individuals who value select personal resources (e.g., sense of pride in myself) while they are indifferent towards other personal resources (e.g., sense of humor). Examining whether there are profiles related to resource

valuation will likely prove useful for research and practical application towards maximizing preferred resource gain and minimizing preferred resource loss, as these likely also affect stressor appraisals within the workplace, and any resulting beneficial or detrimental employee outcomes.

Another topic recommended for future research is the potential incorporation of the effort-reward imbalance model (Siegrist, 1996) with the challenge-hindrance stress model (Cavanaugh et al., 2000) and COR theory (Hobfoll, 1989). The effort-reward imbalance model posits that the degree of strain experienced by an individual is determined by the imbalance of effort expended compared against the perceived rewards (Johnston et al., 2016). Taking this theory alongside the findings of the current study, which suggested the integration of the challenge-hindrance stress model (Cavanaugh et al., 2000) and COR theory (Hobfoll, 1989), it might be the case that when individuals are appraising stressors as a challenge or as a hindrance that the perceived rewards (resources gained) for completing the tasks are weighed against the effort exerted (resources lost) in order to accomplish said tasks. The integration of these theories in future investigations would likely prove worthwhile, especially when considered alongside several of the implications brought up in the current study, such as an individual's weighting or valuing of resources, and the context of short- and long-term resources acquisition and loss, both likely exerting influence towards an individual's calculations of effort and reward imbalance.

I would expect based on the present study's findings that when an imbalance occurs where the individual perceives greater resources gained, they will be more likely to appraise the stressors as a challenge, and the opposite occurring wherein greater resources lost would likely result in a hindrance appraisal. As has been previously discussed, however, individuals may potentially value resources uniquely and thus evaluate the gain or loss of certain resources

differently across individuals. As such, simply examining the ratio between resources gained and resources lost will likely not yield the whole picture. The history of resource loss and resource gain the individual has experienced will also likely play a similar role towards influencing the individual's effort-reward imbalance perceptions.

## **Conclusion**

The present study sought to integrate the challenge-hindrance stress model with conservation of resources theory in order to investigate the role of resource gain and resource loss in challenge and hindrance stressor appraisals. The results of our study were largely supported such that challenge stressors exhibited a significant, positive indirect effect on challenge appraisals via resource gain, while a non-significant indirect effect was observed between challenge stressors and hindrance appraisals via resource loss. Meanwhile hindrance stressors displayed a significant, negative indirect effect on challenge appraisals via resource gain and a significant, positive indirect effect on hindrance appraisals via resource loss. Taken in conjunction, these results suggest the integration of the two aforementioned models, with several avenues for future research to explore, given the potential beneficial (detrimental) effects associated with challenge (hindrance) appraisals.

## References

- Abbas, M., & Raja, U. (2019). Challenge-hindrance stressors and job outcomes: The moderating role of conscientiousness. *Journal of Business and Psychology, 34*, 189-201.  
<http://dx.doi.org/10.1007/s10869-018-9535-z>
- Airila, A., Hakanen, J. J., Schaufeli, W. B., Luukkonen, R., Punakallio, A., & Lusa, S. (2014). Are job and personal resources associated with work ability 10 years later? The mediating role of work engagement. *Work & Stress, 28*(1), 87-105.  
<http://dx.doi.org/10.1080/02678373.2013.872208>
- Anderson, J. C., & Gerbing, D. W. (1991). Predicting the performance of measures in a confirmatory factor analysis with a pretest assessment of their substantive validities. *Journal of Applied Psychology, 76*(5), 732. <http://dx.doi.org/10.1037/0021-9010.76.5.732>
- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273.  
<http://dx.doi.org/10.1037/ocp0000056>
- Byrne, B. M. (2013). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. Routledge.
- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology, 5*(4), 323-370. <http://dx.doi.org/10.1037/1089-2680.5.4.323>
- Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among US managers. *Journal of Applied Psychology, 85*(1), 65. <http://dx.doi.org/10.1037/0021-9010.85.1.65>

- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural equation modeling*, 9(2), 233-255.  
[http://dx.doi.org/10.1207/S15328007SEM0902\\_5](http://dx.doi.org/10.1207/S15328007SEM0902_5)
- Clarke, S. (2012). The effect of challenge and hindrance stressors on safety behavior and safety outcomes: a meta-analysis. *Journal of Occupational Health Psychology*, 17(4), 387.  
<http://dx.doi.org/10.1037/a0029817>
- Colquitt, J. A., Sabey, T. B., Rodell, J. B., & Hill, E. T. (2019). Content validation guidelines: Evaluation criteria for definitional correspondence and definitional distinctiveness. *Journal of Applied Psychology*, 104(10), 1243. <http://dx.doi.org/10.1037/apl0000406>
- Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. *Journal of Applied Psychology*, 95(5), 834. <http://dx.doi.org/10.1037/a0019364>
- DiStefano, C. (2016). Examining fit with structural equation models. *Principles and methods of test construction: Standards and recent advances*, 3.
- Du, D., Wu, Z., & Lu, C. Q. (2023). In what stressful context does self-efficacy promote job performance? The roles of challenge–hindrance stressors. *International Journal of Stress Management*, 30(1), 27. <http://dx.doi.org/10.1037/str0000282>
- Eldor, L. (2016). Looking on the bright side: the positive role of organizational politics in the relationship between employee engagement and work performance. In *Handbook of Organizational Politics* (pp. 217-243). Edward Elgar Publishing.  
<http://dx.doi.org.spot/10.1111/apps.12090>
- Ene, M. C. (2020). *Investigating accuracy of model fit indices in multilevel confirmatory factor analysis* (Doctoral dissertation, University of South Carolina).

- Halbesleben, J. R., Neveu, J. P., Paustian-Underdahl, S. C., & Westman, M. (2014). Getting to the “COR” understanding the role of resources in conservation of resources theory. *Journal of Management*, 40(5), 1334-1364. <http://dx.doi.org/10.1177/0149206314527130>
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513. <http://dx.doi.org/10.1037/0003-066X.44.3.513>
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of general psychology*, 6(4), 307-324.
- Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual review of organizational psychology and organizational behavior*, 5(1), 103-128. <http://dx.doi.org/10.1146/annurev-orgpsych-032117-104640>
- Hobfoll, S. E., Lilly, R. S., & Jackson, A. P. (1992). Conservation of social resources and the self. *The meaning and measurement of social support*, 1, 125-41.
- Hobfoll, S. E., & Lilly, R. S. (1993). Resource conservation as a strategy for community psychology. *Journal of Community Psychology*, 21(2), 128-148. [http://dx.doi.org/10.1002/1520-6629\(199304\)21:2%3C128::AID-JCOP2290210206%3E3.0.CO;2-5](http://dx.doi.org/10.1002/1520-6629(199304)21:2%3C128::AID-JCOP2290210206%3E3.0.CO;2-5)
- Hobfoll, S. E., & Schumm, J. A. (2009). Conservation of resources theory: Application to public health promotion. In R. J. DiClemente, R. A. Crosby, & M. C. Kegler (Eds.), *Emerging theories in health promotion practice and research* (2nd ed., pp. 131–156). Jossey-Bass/Wiley.
- Hox, J., Moerbeek, M., & Van de Schoot, R. (2017). *Multilevel analysis: Techniques and applications*. Routledge.

- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, 6(1), 1-55. <http://dx.doi.org/10.1080/10705519909540118>
- Johnston, D., Bell, C., Jones, M., Farquharson, B., Allan, J., Schofield, P., ... & Johnston, M. (2016). Stressors, appraisal of stressors, experienced stress and cardiac response: A real-time, real-life investigation of work stress in nurses. *Annals of Behavioral Medicine*, 50(2), 187-197. <http://dx.doi.org/10.1007/s12160-015-9746-8>
- Kane-Frieder, R. E., Hochwarter, W. A., & Ferris, G. R. (2014). Terms of engagement: Political boundaries of work engagement–work outcomes relationships. *Human Relations*, 67(3), 357-382. <http://dx.doi.org/10.1177/0018726713495068>
- Kline, T. (2005). *Psychological testing: A practical approach to design and evaluation*. Sage.
- Kronenwett, M., & Rigotti, T. (2022). All's well that ends well!? Moderating effects of goal progress on the relation between challenge and hindrance appraisal and well-being. *Journal of Managerial Psychology*, 37(5), 444-466. <http://dx.doi.org/10.1108/JMP-11-2019-0618>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- LePine, M. A. (2022). The challenge-hindrance stressor framework: an integrative conceptual review and path forward. *Group & Organization Management*, 47(2), 223-254. <http://dx.doi.org/10.1177/10596011221079970>
- LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor–hindrance stressor framework: An explanation for inconsistent relationships

- among stressors and performance. *Academy of Management Journal*, 48(5), 764-775.  
<http://dx.doi.org/10.5465/AMJ.2005.18803921>
- LePine, M. A., Zhang, Y., Crawford, E. R., & Rich, B. L. (2016). Turning their pain to gain: Charismatic leader influence on follower stress appraisal and job performance. *Academy of Management Journal*, 59(3), 1036-1059. <http://dx.doi.org/10.5465/amj.2013.0778>
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural equation modeling*, 9(2), 151-173. [http://dx.doi.org/10.1207/S15328007SEM0902\\_1](http://dx.doi.org/10.1207/S15328007SEM0902_1)
- Ma, J., Liu, C., Peng, Y., & Xu, X. (2021). How do employees appraise challenge and hindrance stressors? Uncovering the double-edged effect of conscientiousness. *Journal of Occupational Health Psychology*, 26(3), 243. <http://dx.doi.org/10.1037/ocp0000275>
- Maslyn, J. M., Farmer, S. M., & Bettenhausen, K. L. (2017). When organizational politics matters: The effects of the perceived frequency and distance of experienced politics. *Human Relations*, 70(12), 1486-1513. <http://dx.doi.org/10.1177/0018726717704706>
- Mazzola, J. J., & Disselhorst, R. (2019). Should we be “challenging” employees?: A critical review and meta-analysis of the challenge-hindrance model of stress. *Journal of Organizational Behavior*, 40(8), 949-961. <http://dx.doi.org/10.1002/job.2412>
- McPhail, R., Chan, X. W., May, R., & Wilkinson, A. (2024). Post-COVID remote working and its impact on people, productivity, and the planet: an exploratory scoping review. *The International Journal of Human Resource Management*, 35(1), 154-182.  
<http://dx.doi.org/10.1080/09585192.2023.2221385>

- Meurs, J. A., & Perrewé, P. L. (2011). Cognitive activation theory of stress: An integrative theoretical approach to work stress. *Journal of Management*, 37(4), 1043-1068. <http://dx.doi.org/10.1177/0149206310387303>
- Min, H., Kim, H. J., & Lee, S. B. (2015). Extending the challenge–hindrance stressor framework: The role of psychological capital. *International Journal of Hospitality Management*, 50, 105-114. <http://dx.doi.org/10.1016/j.ijhm.2015.07.006>
- Mockało, Z., & Widerszal-Bazyl, M. (2021). Role of job and personal resources in the appraisal of job demands as challenges and hindrances. *PloS one*, 16(3), e0248148. <http://dx.doi.org/10.1371/journal.pone.0248148>
- O'Brien, K. E., & Beehr, T. A. (2019). So far, so good: Up to now, the challenge–hindrance framework describes a practical and accurate distinction. *Journal of Organizational Behavior*, 40(8), 962-972. <http://dx.doi.org/10.1002/job.2405>
- Parker, K. (2022, March 9). *Majority of workers who quit a job in 2021 cite low pay, no opportunities for advancement, feeling disrespected*. Pew Research Center. <https://www.pewresearch.org/short-reads/2022/03/09/majority-of-workers-who-quit-a-job-in-2021-cite-low-pay-no-opportunities-for-advancement-feeling-disrespected/>
- Perry, S. J., Carlson, D. S., Kacmar, K. M., Wan, M., & Thompson, M. J. (2023). Interruptions in remote work: a resource-based model of work and family stress. *Journal of Business and Psychology*, 38(5), 1023-1041. <http://dx.doi.org/10.1007/s10869-022-09842-y>
- Podsakoff, N. P., Freiburger, K. J., Podsakoff, P. M., & Rosen, C. C. (2023). Laying the Foundation for the Challenge–Hindrance Stressor Framework 2.0. *Annual Review of Organizational Psychology and Organizational Behavior*, 10, 165-199. <http://dx.doi.org/10.1146/annurev-orgpsych-080422-052147>

- Podsakoff, N. P., LePine, J. A., & LePine, M. A. (2007). Differential challenge stressor-hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: a meta-analysis. *Journal of Applied Psychology, 92*(2), 438. <http://dx.doi.org/10.1037/0021-9010.92.2.438>
- Rashkovits, S. (2019). The importance of the nurse leader's proactivity and intellectual stimulation in the nursing team workload-learning relationship: A cross-sectional study. *Journal of Advanced Nursing, 75*(11), 2647-2658. <http://dx.doi.org/10.1111/jan.14047>
- Rosen, C. C., Dimotakis, N., Cole, M. S., Taylor, S. G., Simon, L. S., Smith, T. A., & Reina, C. S. (2020). When challenges hinder: An investigation of when and how challenge stressors impact employee outcomes. *Journal of Applied Psychology, 105*(10), 1181. <http://dx.doi.org/10.1037/apl0000483>
- Sawhney, G., Cunningham, A., & Michel, J. S (2025). Assessing the Role of Appraisals of Challenge and Hindrance Stressors on Job Satisfaction and Turnover Intention. *Stress and Health, e70116*. <https://doi.org/10.1002/smi.70116>
- Sawyer, K. B., Thoroughgood, C. N., Stillwell, E. E., Duffy, M. K., Scott, K. L., & Adair, E. A. (2022). Being present and thankful: A multi-study investigation of mindfulness, gratitude, and employee helping behavior. *Journal of Applied Psychology, 107*(2), 240. <http://dx.doi.org/10.1037/apl0000903>
- Schriesheim, C. A., Powers, K. J., Scandura, T. A., Gardiner, C. C., & Lankau, M. J. (1993). Improving construct measurement in management research: Comments and a quantitative approach for assessing the theoretical content adequacy of paper-and-pencil survey-type instruments. *Journal of Management, 19*(2), 385-417. [http://dx.doi.org/10.1016/0149-2063\(93\)90058-U](http://dx.doi.org/10.1016/0149-2063(93)90058-U)

- Searle, B. J., & Lee, L. (2015). Proactive coping as a personal resource in the expanded job demands–resources model. *International Journal of Stress Management*, 22(1), 46.  
<http://dx.doi.org/10.1037/a0038439>
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of occupational health psychology*, 1(1), 27. <http://dx.doi.org/10.1037/1076-8998.1.1.27>
- Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford university press.  
<http://dx.doi.org/10.1093/acprof:oso/9780195152968.001.0001>
- Spector, P. E. (2019). Introduction: The challenge–hindrance stressor model. *Journal of Organizational Behavior*, 8(40), 947-948. <http://dx.doi.org/10.1002/job.2404>
- Tadić, M., Bakker, A. B., & Oerlemans, W. G. (2015). Challenge versus hindrance job demands and well-being: A diary study on the moderating role of job resources. *Journal of Occupational and Organizational Psychology*, 88(4), 702-725.  
<http://dx.doi.org/10.1111/joop.12094>
- Ten Brummelhuis, L. L., & Bakker, A. B. (2012). A resource perspective on the work–home interface: The work–home resources model. *American psychologist*, 67(7), 545.  
<http://dx.doi.org/10.1037/a0027974>
- Thuan, L. C. (2020). Motivating follower creativity by offering intellectual stimulation. *International Journal of Organizational Analysis*, 28(4), 817-829.  
<http://dx.doi.org/10.1108/IJOA-06-2019-1799>
- Trougakos, J. P., Hideg, I., Cheng, B. H., & Beal, D. J. (2014). Lunch breaks unpacked: The role of autonomy as a moderator of recovery during lunch. *Academy of Management Journal*, 57(2), 405-421. <http://dx.doi.org/10.5465/amj.2011.1072>

- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational research methods*, 3(1), 4-70. <http://dx.doi.org/10.1177/109442810031002>
- Webster, J. R., & Adams, G. A. (2020). The differential role of job demands in relation to nonwork domain outcomes based on the challenge-hindrance framework. *Work & Stress*, 34(1), 5-33. <http://dx.doi.org/10.1080/02678373.2019.1662855>
- Yuan, Y., & MacKinnon, D. P. (2009). Bayesian mediation analysis. *Psychological methods*, 14(4), 301. <http://dx.doi.org/10.1037/a0016972>
- Zhang, Y., LePine, J. A., Buckman, B. R., & Wei, F. (2014). It's not fair... or is it? The role of justice and leadership in explaining work stressor–job performance relationships. *Academy of Management Journal*, 57(3), 675-697. <http://dx.doi.org.spot/10.5465/amj.2011.1110>
- Zhou, B., Li, Y., Hai, M., Wang, W., & Niu, B. (2021). Challenge-hindrance stressors and cyberloafing: A perspective of resource conservation versus resource acquisition. *Current Psychology*, 1-10. <http://dx.doi.org/10.1007/s12144-021-01505-0>

**Table 1.**Table 1. *Adapted COR-E Scale Item Evaluations*

Item (Resource)	<i>Psa</i>	<i>Psa Item Evaluation</i>	<i>Csv</i>	<i>Csv Item Evaluation</i>
<b>Object Resource</b>				
<b>1. Necessary tools needed to perform my work</b>	0.90	Strong	0.80	Strong
<b>Condition Resource</b>				
<b>1. Status / seniority at work</b>	0.90	Strong	0.80	Strong
2. Feelings of stability in my employment	0.70	Weak	0.40	Weak
<b>3. A role as a leader</b>	1.00	Very Strong	1.00	Very Strong
4. Acknowledgement for accomplishment	0.67	Weak	0.33	Weak
5. Feelings of closeness with a colleague	0.38	Lacking	-0.25	Lacking
<b>6. Understanding from my employer / boss</b>	0.78	Moderate	0.56	Moderate
7. Companionship at work	0.56	Weak	0.11	Weak
8. Support from co-workers	0.40	Weak	-0.20	Lacking
9. Affection from colleagues at work	0.50	Weak	0.00	Lacking
10. Financial stability	0.22	Lacking	-0.56	Lacking
11. People I can learn from	0.13	Lacking	-0.75	Lacking
12. Help with tasks at work	0.11	Lacking	-0.78	Lacking
<b>13. Loyalty of colleagues</b>	0.78	Moderate	0.56	Moderate
14. Involvement in organization with others who have similar interests	0.63	Weak	0.25	Weak
<b>Personal Resource</b>				
<b>1. Feeling that I am successful</b>	0.89	Strong	0.78	Strong
2. Feeling valuable to others	0.63	Weak	0.25	Weak
3. Sense of pride in myself	0.67	Weak	0.33	Weak
4. Feelings that I am accomplishing my goals	0.38	Lacking	-0.25	Lacking
<b>5. Hope</b>	0.89	Strong	0.78	Strong
6. Stamina / endurance	0.40	Weak	-0.20	Lacking
7. Personal health	0.44	Weak	-0.11	Lacking
8. Feeling that my future success depends on me	0.63	Weak	0.25	Weak
9. A positively challenging routine	0.11	Lacking	-0.78	Lacking
<b>10. Sense of optimism</b>	0.89	Strong	0.78	Strong
11. Feeling that I have control over my life	0.63	Weak	0.25	Weak
<b>12. Sense of humor</b>	1.00	Very Strong	1.00	Very Strong
<b>13. Ability to communicate well</b>	0.80	Moderate	0.60	Moderate
14. Feeling that my life is peaceful	0.63	Weak	0.25	Weak
<b>15. Ability to organize tasks</b>	0.78	Moderate	0.56	Moderate
<b>16. Sense of commitment</b>	0.89	Strong	0.78	Strong
<b>17. Self-discipline</b>	0.90	Strong	0.80	Strong
<b>18. Motivation to get things done</b>	0.90	Strong	0.80	Strong
<b>19. Feeling that I know who I am</b>	1.00	Very Strong	1.00	Very Strong
20. Feeling of independence	0.56	Weak	0.11	Weak
21. Feeling that I know how I am progressing in my job	0.63	Weak	0.25	Weak
22. Feeling that my life has meaning or purpose	0.75	Moderate	0.50	Weak
<b>23. Positive feelings about myself</b>	0.89	Strong	0.78	Strong
24. Progress or mastery of a job-related skill	0.33	Lacking	-0.33	Lacking
<b>Energy Resource</b>				
1. Money for advancement or self-improvement (education, starting a business)	0.50	Weak	0.00	Lacking
2. Advancement in my education or training	0.44	Weak	-0.11	Lacking
<b>3. Time for adequate sleep</b>	0.78	Moderate	0.56	Moderate
4. "Free time"	0.67	Weak	0.33	Weak
5. Time to complete my work	0.50	Weak	0.00	Lacking
6. Meaningful time with my colleagues	0.56	Weak	0.11	Weak
7. Mental alertness	0.22	Lacking	-0.56	Lacking
8. Physical strength	0.50	Weak	0.00	Lacking
9. Energy	0.30	Lacking	-0.40	Lacking

Note. *Psa* = Proportion of substantive agreement; *Csv* = Substantive validity coefficient; Bolded items were retained for Study 2.

**Table 2.**

Table 2. Means, Standard Deviations, Correlations and Intercorrelations among Variables

Variable	<i>M</i>	<i>SD</i>	$\alpha$	ICC	1	2	3	4	5	6
1. Challenge stressors	3.90	1.25	.85 - .92	0.58	—	.26**	.12**	.03	.12**	.03
2. Hindrance stressors	1.87	0.89	.75 - .89	0.71	.48**	—	-.09	.15**	-.13**	.10
3. Resource gain	3.72	1.20	N/A	0.80	.21**	-.23**	—	-.38**	.44**	-.25**
4. Resource loss	1.71	0.75	N/A	0.65	.28**	.62**	-.41**	—	-.34**	.34**
5. Challenge appraisals	4.36	1.48	.94 - .98	0.69	.21**	-.27**	.77**	-.54**	—	-.24**
6. Hindrance appraisals	2.35	1.24	.96 - .99	0.55	.39**	.64**	-.25**	.65**	-.36**	—

*Note.* Correlations below the diagonal depict person-level correlations ( $N = 105$ ). Person-level correlations of day-level variables are based on the person mean. Correlations above the diagonal depict day-level correlations ( $N = 772$ ). Reported Cronbach's alphas of day-level variables depict the range over ten workdays.

\* $p < .05$ , \*\* $p < .01$

**Table 3.**Table 3. *Goodness-of-Fit Statistics for Models Tested*

Model	$\chi^2$	<i>df</i>	SCF	CFI	RMSEA	AIC	BIC	Comparison	TRd	$\Delta df$
2 Factor MCFA										
M1: 1-factor model	283.634***	18	1.3722	.754	.144	13319.805	13456.932	—	—	—
M2: 2-factor model	16.488	16	1.0137	1.00	.007	12951.312	13097.580	M1-M2	87.8470***	2

*Note.* Comparison made using Satorra-Bentler Scaled Chi-Square Difference Test.

TRd = Satorra-Bentler Scaled Chi-Square Difference

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Table 4.**

Table 4a. *Study Two Multilevel Estimates Relating to Challenge Stressors*

Variables	Resource Gain		Resource Loss		Challenge Appraisal		Hindrance Appraisal	
	Est	SE	Est	SE	Est	SE	Est	SE
<b>Fixed Effects</b>								
Intercept					.68	.42	-.33	.35
<b>Within-Person</b>								
Challenge Stressors	.07*	.02	.02	.02	.06*	.03	.03	.04
Resource Gain					.65*	.05		
Resource Loss							.56*	.07
<b>Indirect Effects</b>								
Challenge Stressors → Resource Gain → Challenge Appraisal					.04*	.02		
Monte Carlo (95%) CI [LL, UL]					[.016	.073]		
Challenge Stressors → Resource Loss → Hindrance Appraisal							.01	.01
Monte Carlo (95%) CI [LL, UL]							[-.014	.032]

\* $p < .05$ , \*\* $p < .01$

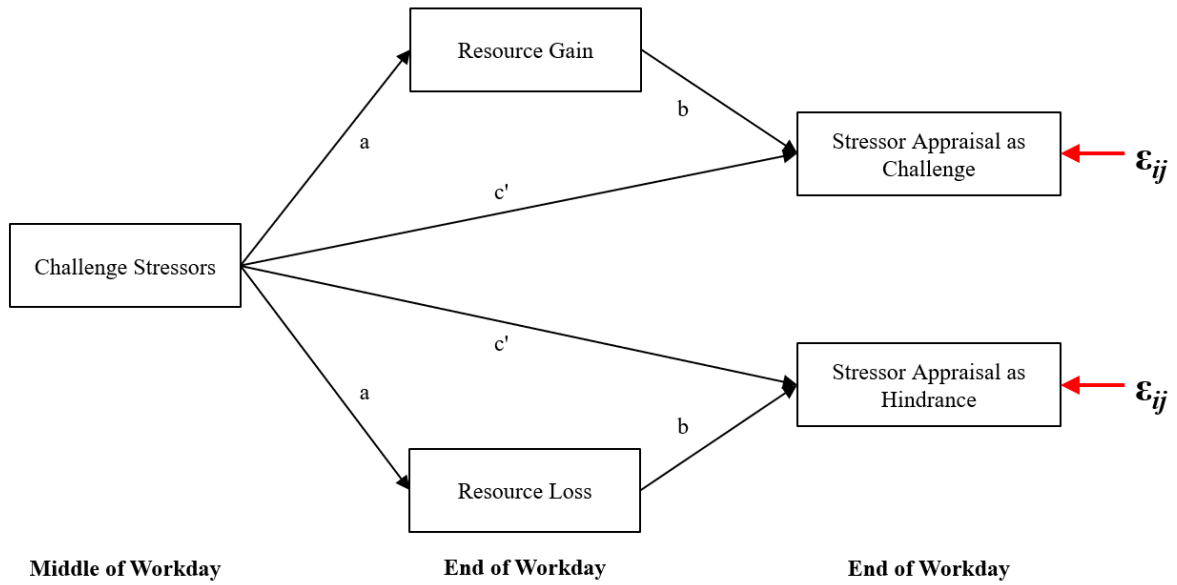
Table 4b. *Study Two Multilevel Estimates Relating to Hindrance Stressors*

Variables	Resource Gain		Resource Loss		Challenge Appraisal		Hindrance Appraisal	
	Est	SE	Est	SE	Est	SE	Est	SE
<b>Fixed Effects</b>								
Intercept					1.27*	.44	.12	.24
<b>Within-Person</b>								
Hindrance Stressors	-.09*	.04	.15*	.04	-.14*	.06	.11	.07
Resource Gain					.66*	.05		
Resource Loss							.55*	.07
<b>Indirect Effects</b>								
Hindrance Stressors → Resource Gain → Challenge Appraisal					-.06*	.03		
Monte Carlo (95%) CI [LL, UL]					[-.117	-.009]		
Hindrance Stressors → Resource Loss → Hindrance Appraisal							.08*	.02
Monte Carlo (95%) CI [LL, UL]							[.038	.130]

\* $p < .05$ , \*\* $p < .01$

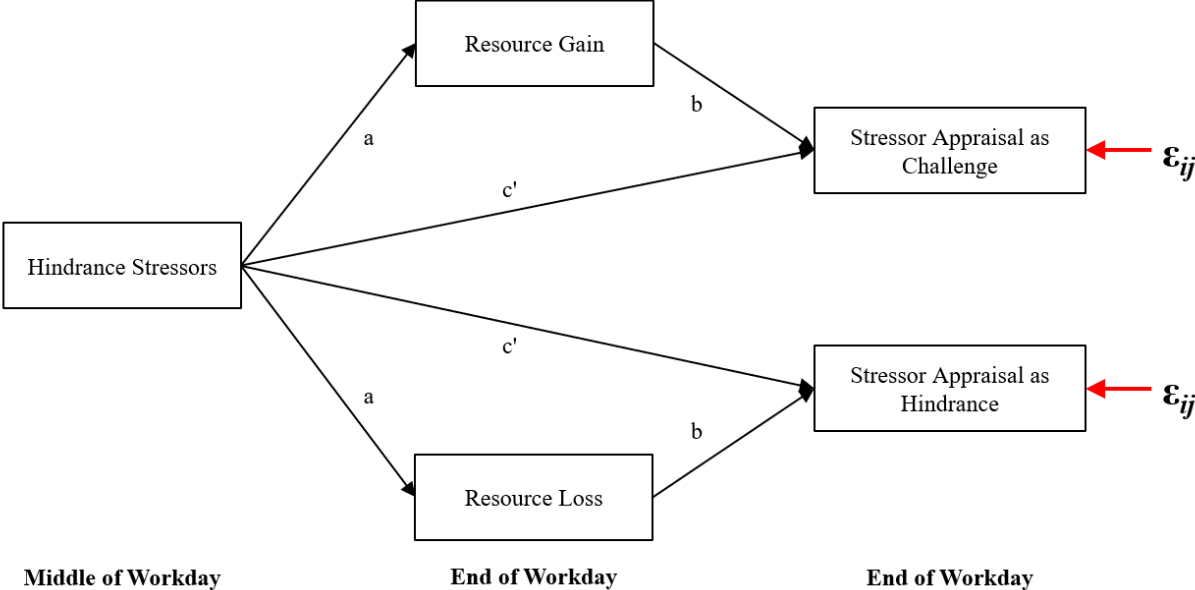
**Figure 1.**

*Proposed challenge stressor multilevel research model.*



**Figure 2.**

*Proposed hindrance stressor multilevel research model.*



Appendix

**Conservation of Resources Evaluation Scale (COR-E; Hobfoll & Lilly, 1993)**

Directions: For each item, please rate the extent to which you felt you have gained (lost) any of the following.

1 None	2 Little	3 Somewhat	4 Much	5 A great deal
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1. Personal transportation (car, truck, etc.)
2. Feeling that I am successful
3. Time for adequate sleep
4. Good marriage
5. Adequate clothing
6. Feeling valuable to others
7. Family stability
8. Intimacy with one or more family members
9. Clothing that is more than what I need
10. Sense of pride in myself
11. "Free time"
12. Time for work
13. Feelings that I am accomplishing my goals
14. Hope
15. A good relationship with my children
16. Time with loved ones
17. Necessary tools for work
18. Children's health
19. Stamina / endurance
20. Necessary appliances for home
21. Personal health
22. Feeling that my future success depends on me
23. A positively challenging routine
24. Housing that suits my needs
25. Sense of optimism
26. Status / seniority at work
27. Adequate food
28. Home that is more than what I need
29. Stable employment
30. Intimacy with spouse or partner
31. Adequate furnishing for home
32. Feeling that I have control over my life
33. Sense of humor

34. A role as a leader
35. Ability to communicate well
36. Essentials for children
37. Feeling that my life is peaceful
38. Acknowledgement for accomplishment
39. Ability to organize tasks
40. "Extras" for children
41. Sense of commitment
42. Intimacy with at least one friend
43. Money for "extras"
44. Self-discipline
45. Understanding from my employer / boss
46. Companionship
47. Savings or emergency money
48. Motivation to get things done
49. Spouse / partner's health
50. Support from co-workers
51. Adequate income
52. Feeling that I know who I am
53. Adequate credit (financial)
54. Feeling independent
55. Financial assets (stocks, property, etc.)
56. Knowing where I am going with my life
57. Affection from others
58. Financial stability
59. Feeling that my life has meaning or purpose
60. Positive feelings about myself
61. People I can learn from
62. Money for transportation
63. Help with tasks at work
64. Medical insurance
65. Involvement with church, synagogue, etc.
66. Retirement security (financial)
67. Help with tasks at home
68. Loyalty of friends
69. Help with childcare
70. Financial help if needed
71. Health of family / close friends
72. Involvement in organization with others who have similar interests
73. Money for advancement or self-improvement (education, starting a business)
74. Advancement in my education or training

### Challenge Stressors Scale (Zhang, LePine, Buckman, & Wei; 2014)

*Directions:* Please rate your agreement to the following statements:

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neither agree nor disagree	5 Somewhat agree	6 Agree	7 Strongly agree
------------------------	---------------	------------------------	---------------------------------	---------------------	------------	---------------------

1. So far today, I had to complete a lot of hard work.
2. So far today, I had to work very hard.
3. So far today, I had time pressure.
4. So far today, I had to perform complex tasks.
5. So far today, I had to multitask my assigned projects.
6. So far today, I had high levels of responsibility.

### Hindrance Stressors Scale (Zhang, LePine, Buckman, & Wei; 2014)

*Directions:* Please rate your agreement to the following statements:

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neither agree nor disagree	5 Somewhat agree	6 Agree	7 Strongly agree
------------------------	---------------	------------------------	---------------------------------	---------------------	------------	---------------------

1. So far today, I had to deal with administrative hassles.
2. So far today, I experienced bureaucratic constraints to completing work (red tape).
3. So far today, I received conflicting instructions and expectations from my boss or bosses.
4. So far today, I had unclear job tasks.
5. So far today, I received conflicting requests from my supervisor(s).
6. So far today, I had disputes with coworkers.
7. So far today, I had to deal with office politics.

### Challenge Stressor Appraisal Scale (LePine et al., 2016)

*Directions:* Please rate your agreement to the following statements:

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neither agree nor disagree	5 Somewhat agree	6 Agree	7 Strongly agree
------------------------	---------------	------------------------	---------------------------------	---------------------	------------	---------------------

1. Working to fulfill the demands of my job today helped to improve my personal growth and well-being.
2. Today, I felt the demands of my job challenge me to achieve personal goals and accomplishment.
3. Today, I felt that my job promoted my personal accomplishment.

### Hindrance Stressor Appraisal Scale (LePine et al., 2016)

*Directions:* Please rate your agreement to the following statements:

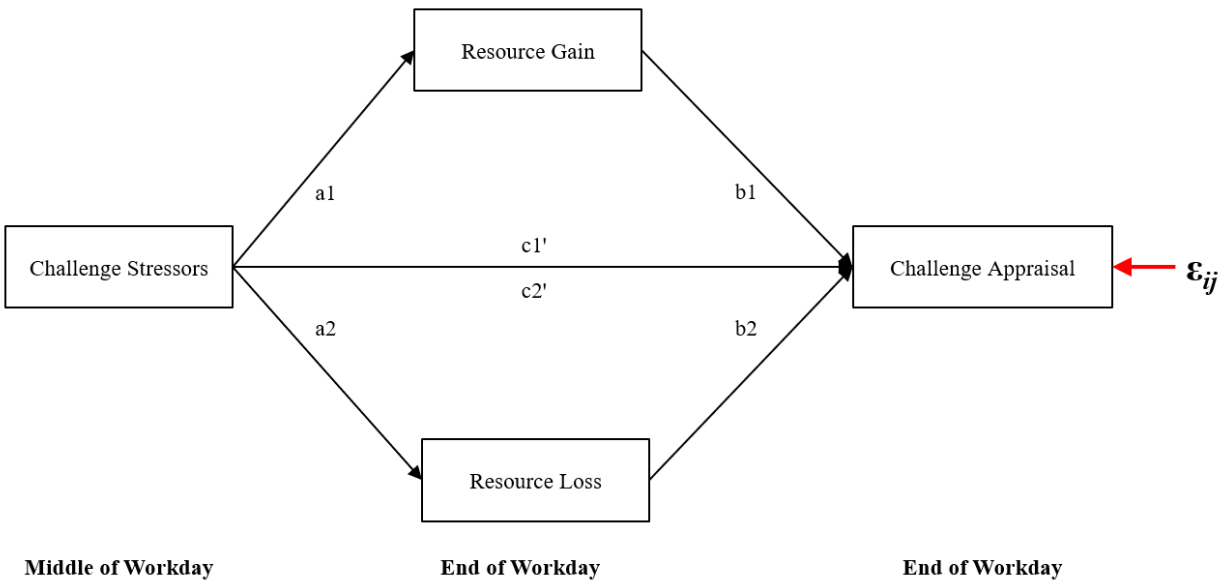
1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neither agree nor disagree	5 Somewhat agree	6 Agree	7 Strongly agree
------------------------	---------------	------------------------	---------------------------------	---------------------	------------	---------------------

1. Working to fulfill the demands of my job today thwarted my personal growth and well-being.
2. Today, I felt the demands of my job constrain my achievement of personal goals and development.
3. Today, I felt that my job hindered my personal accomplishment.

Supplemental Materials

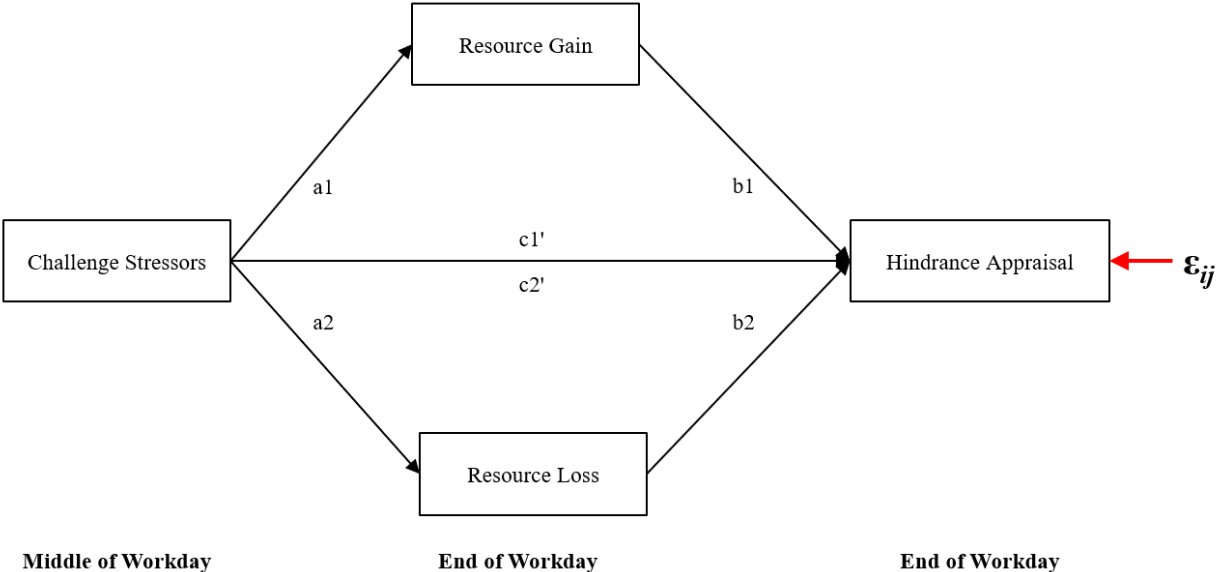
**Figure 3.**

*Individual challenge stressor → challenge appraisal multilevel model.*



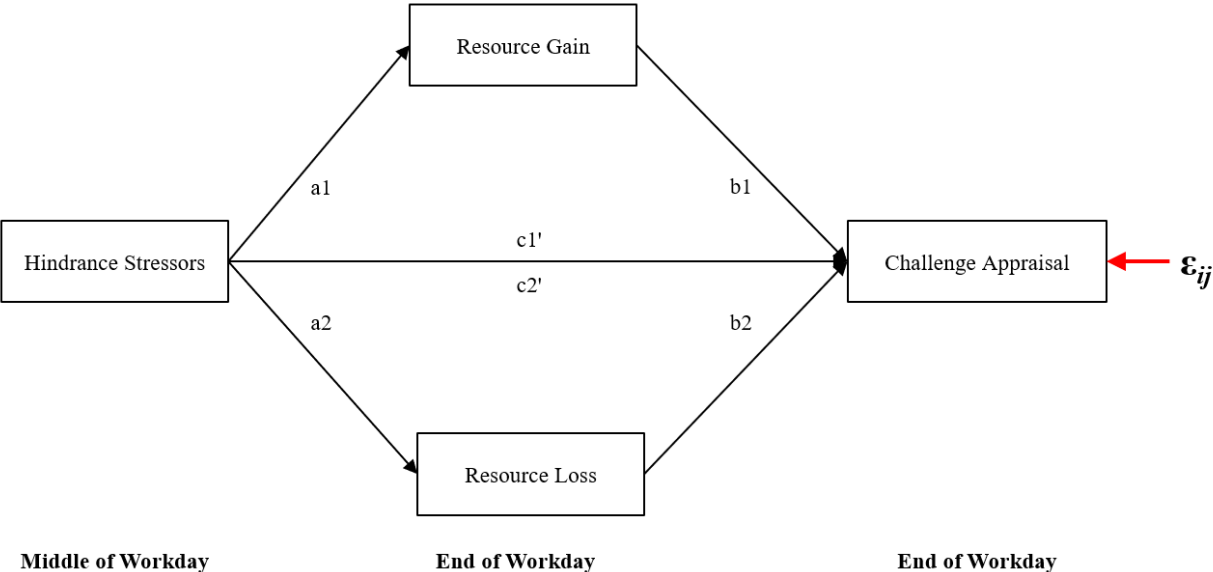
**Figure 4.**

*Individual challenge stressor → hindrance appraisal multilevel model.*



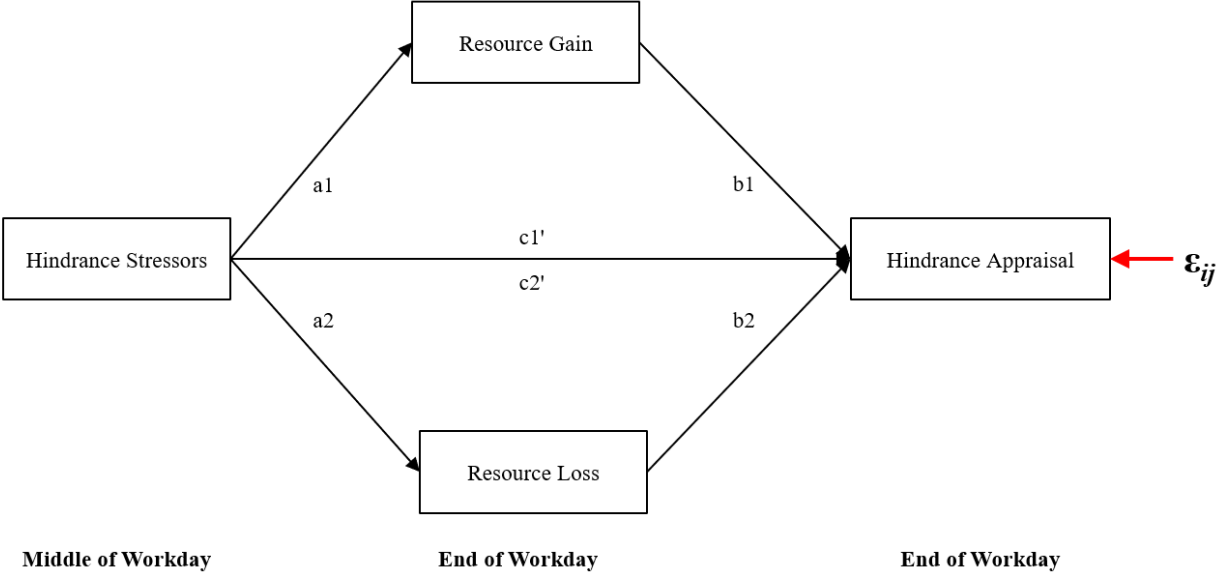
**Figure 5.**

*Individual hindrance stressor → challenge appraisal multilevel model.*



**Figure 5.**

*Individual hindrance stressor → hindrance appraisal multilevel model.*



**Table 5.**Table 5a. *Study Two Multilevel Estimates Relating to Challenge Stressors and Challenge Appraisals*

Variables	Resource Gain		Resource Loss		Challenge Appraisal	
	Est	SE	Est	SE	Est	SE
<b>Fixed Effects</b>						
Intercept					2.01*	.47
<b>Within-Person</b>						
Challenge Stressors	.07*	.02	.02	.02	.08*	.03
Resource Gain					.56*	.06
Resource Loss					-.34*	.06
<b>Indirect Effects</b>						
Challenge Stressors → Resource Gain → Challenge Appraisal					.04*	.01
Monte Carlo (95%) CI [LL, UL]					[.013	.063]
Challenge Stressors → Resource Loss → Challenge Appraisal					-.01	.01
Monte Carlo (95%) CI [LL, UL]					[-.020	.008]

\* $p < .05$ , \*\* $p < .01$ Table 5b. *Study Two Multilevel Estimates Relating to Challenge Stressors and Hindrance Appraisals*

Variables	Resource Gain		Resource Loss		Hindrance Appraisal	
	Est	SE	Est	SE	Est	SE
<b>Fixed Effects</b>						
Intercept					-.13	.48
<b>Within-Person</b>						
Challenge Stressors	.07*	.02	.01	.02	.05	.04
Resource Gain					-.28*	.07
Resource Loss					.48*	.08
<b>Indirect Effects</b>						
Challenge Stressors → Resource Gain → Hindrance Appraisal					-.02*	.01
Monte Carlo (95%) CI [LL, UL]					[-.036	-.006]
Challenge Stressors → Resource Loss → Hindrance Appraisal					.01	.01
Monte Carlo (95%) CI [LL, UL]					[-.012	.027]

\* $p < .05$ , \*\* $p < .01$

Table 5c. *Study Two Multilevel Estimates Relating to Hindrance Stressors and Challenge Appraisals*

Variables	Resource Gain		Resource Loss		Challenge Appraisal	
	Est	SE	Est	SE	Est	SE
<b>Fixed Effects</b>						
Intercept					2.21*	.48
<b>Within-Person</b>						
Hindrance Stressors	-.09*	.04	.15*	.04	-.11	.06
Resource Gain					.57*	.06
Resource Loss					-.31*	.06
<b>Indirect Effects</b>						
Hindrance Stressors → Resource Gain → Challenge Appraisal					-.05*	.02
Monte Carlo (95%) CI [LL, UL]					[-.101	-.008]
Hindrance Stressors → Resource Loss → Challenge Appraisal					-.05*	.02
Monte Carlo (95%) CI [LL, UL]					[-.078	-.019]

\* $p < .05$ , \*\* $p < .01$

Table 5d. *Study Two Multilevel Estimates Relating to Hindrance Stressors and Hindrance Appraisals*

Variables	Resource Gain		Resource Loss		Hindrance Appraisal	
	Est	SE	Est	SE	Est	SE
<b>Fixed Effects</b>						
Intercept					-.11	.46
<b>Within-Person</b>						
Hindrance Stressors	-.09*	.04	.15*	.04	.10	.07
Resource Gain					-.26*	.07
Resource Loss					.47*	.08
<b>Indirect Effects</b>						
Hindrance Stressors → Resource Gain → Hindrance Appraisal					.02*	.01
Monte Carlo (95%) CI [LL, UL]					[.003	.051]
Hindrance Stressors → Resource Loss → Hindrance Appraisal					.07*	.02
Monte Carlo (95%) CI [LL, UL]					[.031	.113]

\* $p < .05$ , \*\* $p < .01$