
Guest editorial: Are challenges hindering us? The limitations of models that categorize work stressors

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Work stressors are work characteristics or experiences that provoke stress responses. For many years, different types of work stressors were studied independently of one another and were treated as distinct in their qualities, mechanisms and effects (Warr, 1987). Even studies examining multiple stressors tended to assess them independently, in order to reveal their relative risks (as with research on role overload, role ambiguity and role conflict, e.g. Goode, 1960; Kahn and Quinn, 1970; Rizzo *et al.*, 1970).

Over the past 50 years, research in applied psychology and management has become less exploratory and more hypothetico-deductive (Spector, 2017). This has driven efforts to develop, refine and use predictive models broad enough to explain fundamental psychological processes with reference to phenomena that are meaningful across diverse contexts. To this end, models emerged that aggregate multiple work stressors into a few distinct categories. This special issue focuses largely on the Challenge-Hindrance model, but many observations can be applied to other models of this type.

Challenge-Hindrance model: background

An assumption behind much research on work stressors is that they are inherently harmful to employees' well-being and performance. The Challenge-Hindrance model rejects this assumption using concepts that are derived from, but different to, concepts of individual stress appraisal popularized in Lazarus and Folkman's (1984) Transactional Model of Stress and Coping. Based on work by Cavanaugh *et al.* (2000), the Challenge-Hindrance model differentiates stressors *a priori* into two types: those that make it harder to achieve one's goals (*hindrance stressors*, such as bureaucratic obstacles, distractions and role ambiguity) and those that facilitate goal achievement (*challenge stressors*, such as time pressure, workload or responsibility). The model predicts that, because of their fundamental differences, hindrance stressors will lead to worse outcomes and challenge stressors to better outcomes.

The model is popular. At the time of writing, the Cavanaugh *et al.* (2000) article had been cited hundreds of times (Google Scholar = 2,113; Web of Science = 929), although many papers published on the topic omit this article, in part for reasons discussed below. An early meta-analytic test of the model's assumptions by LePine *et al.* (2005) has been cited even more often (Google Scholar = 2,330; Web of Science = 1,145). A PsycInfo search of post-2000 publications using the phrase "Challenge-Hindrance model" yielded nearly 18,000 results.

Despite this popularity, few people are aware that the current form of the model differs from that described and tested in the paper on which the model is based. Cavanaugh *et al.* (2000) introduced the distinction between challenge and hindrance stressors, but their interest was in the effects of individual responses to these stressors. Instead of measuring perceived levels of the stressors, Cavanaugh *et al.* asked participants to estimate the amount of stress caused by each stressor (a methodology that has been criticized, e.g. for confounding



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cause and effect; [Edwards et al., 2014](#)). This reflects an underlying model whereby the effects of stressor types are shaped primarily by subjective experiences (challenge stress and hindrance stress) that can differ between individuals.

By contrast, the Challenge-Hindrance model is typically used to predict human outcomes from environmental (work) characteristics rather than subjective experiences. This approach to the model aligns with objectivist philosophies – those that seek to explain reality without reference to subjective experiences. For example, the Challenge-Hindrance model is consistent with determinism, which sees behavior as a simple product of environmental influences ([Burrell and Morgan, 1979](#)).

Challenge-Hindrance model: strengths

A clear strength of the Challenge-Hindrance model is its consistent effects. Across many studies (for meta-analyses see [Clarke, 2012](#); [LePine et al., 2005](#); [Mazzola and Disselhorst, 2019](#); [Podsakoff et al., 2007](#)), hindrance stressors tend to be associated more strongly with undesirable psychological and behavioral outcomes in comparison to challenge stressors. This consistency has been interpreted as showing that the distinction between challenge and hindrance stressors is valid and generalizable ([O'Brien and Beehr, 2019](#)).

Part of the consistency may be due to the model's simplicity, comprised of just two independent variables (challenge and hindrance stressors), each with a single main effect path to a generic outcome. Simplicity is a valuable feature for theoretical models, even those designed to explain complex phenomena. The [American Psychological Association \(2022\)](#) recommends developing theories according to the law of parsimony, whereby models are kept simple to minimize the number of unsupported assumptions, hypothesized entities and unobservable constructs.

The simplicity, in turn, aids with the intuitive appeal of the model. The challenge-hindrance distinction acknowledges how factors that interfere with one's goals (hindrances) are experienced differently from those that are demanding but offer valued opportunities (challenges). Once understood, this distinction can be utilized easily across a wide variety of work contexts, despite differences in the nature and extent of stressors experienced. Practical implications are also inferred easily: to improve employee attitudes, behavior and well-being, organizations should try to eliminate or reduce the "bad" hindrance stressors, while maintaining or even increasing the "good" challenge stressors.

The objectivist aspects of the model allow it to be studied using methods that minimize sources of error, such as imprecise memory and common method bias. This helps address measurement limitations in research. As for practical applications, a case for intervention may be more persuasive if supported with verifiable data linking work characteristics directly to work outcomes.

Challenge-Hindrance model: limitations

Despite much evidence supporting the Challenge-Hindrance model, it remains important to consider its limitations. It is always worth considering what is lost through model simplification. A failure to account for important variables, processes and relationships can lead to problems, particularly for guiding real-world practices. And while supportive evidence for a model is reassuring, caution is always required to avoid misinterpretations.

Objectivist approaches to psychological phenomena require close examination given so many contemporary theories recognize the important roles played by subjective phenomena, such as cognition and emotion. Models that downplay the importance of an individual's unique experiences, therefore, have the potential to mislead researchers and practitioners. Such a criticism can be made of the Challenge-Hindrance model, or at least of the way its use

directs attention towards the environment and away from subjective experiences. Yet, the factor uniting challenge stressors is someone's *a priori* judgment that they have more potential to facilitate than to obstruct employees' goals; the reverse is true of hindrance stressors. If such judgments were instead made by workers, they would be *stress appraisals*: an individual's judgments of the extent to which events or situations have potential for personal gain or loss (Lazarus and Folkman, 1984). Stress appraisals can vary between different people and even within a single individual over time (Searle and Auton, 2015). Previous research has found individual challenge appraisal can explain much, if not all, of the beneficial effects that would otherwise be attributed to challenge stressors (e.g. Raper and Brough, 2021; Searle and Auton, 2015; Webster *et al.*, 2011). In other words, subjective experiences may drive or shape many of the effects attributed to objective characteristics of work.

Then there is the matter of stressor categorization. The Challenge-Hindrance model, as usually conceptualized, requires stressors that be categorized either as challenges or as hindrances. Workload, although consistently categorized as a challenge stressor, is associated with unusually negative effects (Widmer *et al.*, 2012). Webster *et al.* (2011) found that workload was appraised to a similar degree both as a challenge and as a hindrance. This may be due in part to measurement limitations (e.g. scales that implicitly focus on excessive workload) and/or curvilinear effects (e.g. beyond a certain point, higher workload may feel more like a hindrance than a challenge; O'Brien and Beehr, 2019). But whatever the reasons, problems with such stressors have led even advocates of the Challenge-Hindrance model to acknowledge that "assignments of stressors into only one or the other of these categories *a priori* is risky if appraisal theory is correct" (O'Brien and Beehr, 2019, p. 964).

Some people have tried to address limitations in the model by expanding it. Most researchers describe hindrances in similar terms to those of Cavanaugh *et al.* ("job demands or work circumstances that involve excessive or undesirable constraints that interfere with or hinder an individual's ability to achieve valued goals", 2000, p. 67). But in explaining underlying processes, many researchers equate hindrance with threat (e.g. LePine *et al.*, 2005, pp. 765, 767; Van den Broeck *et al.*, 2010, pp. 738, 741; Webster *et al.*, 2011, p. 506) even though the psychology literature defines threats not as goal obstructions but rather as anticipated personal harms or losses (Lazarus and Folkman, 1984). Exploring this distinction, Tuckey *et al.* (2015) found that hindrances could be differentiated from threats in terms of stressors, appraisals and outcomes.

Another example emerges from the model's omission of job resources. Thousands of studies have demonstrated the value of resources, such as autonomy, learning opportunities and leader and team supports, in the context of studying effects of work characteristics (cf. the Job Demands-Resources model; Demerouti *et al.*, 2001). Exploring this omission, Crawford *et al.* (2010) found that by examining job resources alongside challenges and hindrances, thus integrating the Challenge-Hindrance and Job Demands-Resources models, predictive power was improved substantially.

More limitations emerge when we consider practical applications. It is not uncommon for researchers to over-state potential benefits of high challenge stressors or even to recommend increasing challenge stressors (e.g. Hargrove *et al.*, 2013; LePine *et al.*, 2005). But the evidence that hindrance stressors generally have worse outcomes than challenge stressors is not proof that high challenge stressors are beneficial. Podsakoff *et al.*'s (2007) meta-analysis showed challenge stressors were not associated meaningfully with either job satisfaction or organizational commitment. Mazzola and Disselhorst's (2019) meta-analysis showed challenge stressors were also unrelated to citizenship behavior and work performance. Clarke's (2012) meta-analysis showed challenge stressors were unrelated to either safety compliance or occupational injuries. Yet, all these meta-analyses revealed higher challenge stressors were related to some undesirable outcomes, such as more physical and psychological strains (Mazzola and Disselhorst, 2019; Podsakoff *et al.*, 2007), higher

turnover intentions (Podsakoff *et al.*, 2007), more accident near-misses and less safety participation (Clarke, 2012). All these results are inconsistent with a message that too many people infer from the model: that challenge stressors are beneficial.

Even where such benefits are found, they may be context specific. For example, they may be limited to relatively stable challenge stressors, whereas fluctuating challenge stressors may be harmful (Rosen *et al.*, 2020). Benefits of high challenge stressors may be experienced only by workers whose hindrance stressors are low (e.g. Van Oortmerssen *et al.*, 2020). Even where hindrances (such as unfairness) are low, effects may follow a curvilinear relationship whereby benefits can be found only at moderate levels of challenge stressors (Janssen, 2001). And the potential for higher challenges to mitigate the harms of high hindrances may be small compared to the benefits of reducing hindrances themselves (e.g. Hollebeek and Haar, 2012). In short, avoiding harm when putting theories into practice may require a more sophisticated understanding than that is provided by a simple model.

Special issue contributions

The goal of this special issue was to highlight limitations of this model (and those like it), or of the way such models are studied and applied. The first three articles explore the role of stress appraisals in the context of the Challenge-Hindrance model. Stress appraisals have the potential to highlight limitations in parsimonious, objectivist models of work stressors. In the first article, Jumelet *et al.* explore the way that business owners appraise work-related challenges and hindrances. The study uses qualitative methodology to elicit the unique experiences of an under-researched population without putting words in their mouths. Inconsistent with the standard Challenge-Hindrance model, results indicate many differences between business owners in judgments about which stressors facilitate goals and which ones obstruct goals. Personal and contextual factors are explored that may influence such appraisals.

The second article, by Smith *et al.*, examines the mediating role of stress appraisals in relations between stressors and employee well-being. In particular, the study explores Tuckey *et al.*'s (2015) expanded framework in which stressors may be categorized and appraised not just as challenges and hindrances, but also as threats. The results support the notion that challenge, hindrance and threat appraisals mediate the effects of stressors on outcomes – a more complex model than is suggested by the Challenge-Hindrance dichotomy. The study also looks at how personality could moderate stressor-appraisal relationships, though the predicted interactions were not observed.

The third article presents evidence of genuine moderation effects. Kronenwett and Rigotti discuss goal progress in the context of a model focused on the potential effects of stressors on goals. Their results show that stress appraisals can mediate the effects of stressors, but the nature of these effects can be quite specific, and more importantly, they can be influenced by perceived goal progress. This means that if you expect high time pressure to interfere with your goal progress, your well-being is likely to suffer unless you see that you are actually making good progress. This study reinforces the message that so-called challenge stressors can have negative consequences and that individual stress appraisals can be critical in shaping our responses to stressors. Moreover, it also reminds us of the importance of day-to-day experiences, such as goal progress, in shaping how people appraise events and situations.

We then move away from stress appraisals to look at other elaborations on the Challenge-Hindrance model. Like appraisal, affect is another psychological phenomenon that changes rapidly in response to situational triggers. In the fourth article, Liu and Ren found positive affect mediated effects of both challenge and hindrance stressors on career initiative. As in

the third article, they also explored how the mediator–outcome relationship is moderated. In this case, the moderator was job autonomy, which as discussed is known to play an important role in employee well-being and work behavior (e.g. Demerouti *et al.*, 2001) even in the context of challenge and hindrance stressors (Crawford *et al.*, 2010). Liu and Ren's findings show that job autonomy has the potential to enhance the relationship between stressor-related affect and employee behavior.

In the fifth article, Giebe and Rigotti use Self-Determination Theory (SDT; Deci and Ryan, 1985) to present yet another mechanism linking stressors with outcomes: the satisfaction or thwarting of psychological needs. At the heart of SDT is the notion that people are motivated by experiences that effectively satisfy the basic psychological needs of autonomy, competence and relatedness. Results of this study showed that the satisfaction or thwarting of psychological needs mediated effects of stressors on well-being, highlighting the role of subjective experiences in reactions to workplace stressors. Moreover, effects of time pressure were mediated via a positive association with thwarted needs, highlighting the problems with categorizing such variables as positive challenges.

It must also be acknowledged that many problems lie not inherently within these models but rather in the ways they are used. Such problems can be seen in many forms, such as misleading terminology (e.g. describing challenges and hindrances as “good” and “bad” stressors) or imprudent speculations (e.g. about the likely benefits of increasing “good” stressors). They can also come in the form of imprecise methodologies as demonstrated in the final paper of the issue.

Instead of challenges and hindrances, Lang *et al.* focus on the effort–reward Imbalance (ERI; Siegrist, 1996) model. An extension of social exchange theories of motivation (e.g. Homans, 1961), ERI describes stress as a phenomenon emerging where people invest efforts that are not balanced by a commensurate set of rewards. The paper discusses the model's potential value, but contrasts it with the limitations in how the model is typically tested by researchers. Common operationalizations use self-reports of perceived efforts and perceived rewards, the scores for which are often converted into a single efforts/rewards ratio. As with debates about the limitations of difference scores to measure congruence (e.g. Edwards, 1994), Lang *et al.* discuss the conceptual and practical limitations of ratio scores instead of examining efforts and rewards as independent variables.

Conclusions

Simple and intuitive models with consistent findings are likely to be popular, regardless of their limitations. The Challenge-Hindrance model describes an easy-to-understand pattern that has potential to guide good research and practice. The “challenge” is to draw upon such a model effectively without being misled (or misleading others) due to unmodeled underlying processes, boundary conditions or other factors that influence interpretation (such as measurement/analysis issues or considerations for practice).

This special issue brings together articles that highlight the importance of critical discussion of models like the Challenge-Hindrance model. Addressing limitations in such models is useful for improving our understanding of the nature, processes and effects of stressors on employees and organizations and to help direct appropriate stress management strategies. We hope that these articles generate further research and ideas not only about one specific model of work stress, but also about other ways of understanding stress and addressing its ever-increasing costs. The COVID pandemic and associated escalation in physical hazards and remote working has highlighted the potential for work factors to impact employee well-being, particularly the difficulties in effectively managing work (and its associated challenges, hindrances, threats and resources) while employees face a prolonged crisis. A focus on reducing work hindrances, ensuring appropriate resources and

supports and crafting improved work systems to meet individual needs is a clear outcome of this pandemic and is, for some organizations, as important as economic revenue (Brough et al., 2021). This issue provides potentially useful information on the ways in which employee well-being can be addressed effectively as we reshape our work environments.

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Further reading

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