

When a challenge becomes a threat: the nonlinear associations of job stressors with workplace bullying and other work outcomes

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Abstract

Purpose – Work-related stress is a major concern for employee health and organisational functioning. While job demands are often linked to strain, some may also foster growth and development. Understanding when and under what conditions job stressors contribute to harm is therefore critical. This study examines nonlinear associations between challenge and hindrance stressors and key work outcomes within the challenge–hindrance stressor framework (CHSF), with particular focus on workplace bullying as a severe outcome of adverse working conditions.

Design/methodology/approach – Data were drawn from a prospective national probability sample of Swedish employees ($N = 2,024$). Linear, quadratic and moderation analyses were used to examine associations between job stressors at baseline and subsequent workplace bullying, job satisfaction, psychological distress, and turnover intention.

Findings – Challenge stressors showed curvilinear associations with all outcomes, with the most favourable outcomes at moderate levels. Hindrance stressors displayed mainly linear associations with poorer outcomes. Hindrance stressors also moderated the nonlinear effect of challenge stressors on workplace bullying, such that both low and high challenge levels were associated with greater bullying exposure when hindrance stressors were high.

Practical implications – The findings highlight the importance of assessing combinations of job stressors in workplace health management, as certain configurations may signal increased risk of bullying and other adverse outcomes.

Originality/value – This study contributes to a more nuanced understanding of the CHSF by integrating nonlinearity and stressor interactions, and advances the work environment hypothesis by demonstrating how combinations of job stressors influence the risk of workplace bullying.

Keywords Challenge stressors, Hindrance stressors, Workplace bullying, Job stress, Nonlinear relationships, Workplace health

Paper type Research article

Introduction

Work-related stress is a major concern for employee health and organisational functioning. While job demands are often linked to strain and impaired well-being, some demands may also foster growth and development. Understanding when and under what conditions job stressors contribute to harm is therefore critical. In severe cases, poor working conditions have been linked to workplace bullying—one of the most harmful forms of interpersonal mistreatment at work (Einarsen *et al.*, 1994, 2020). However, it remains unclear how different types of job stressors, individually and in combination, relate to workplace bullying and other work outcomes, and whether their effects vary depending on the level of exposure. To capture both severe outcomes and more general indicators of strain, the present study examines these

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associations in relation to job satisfaction, psychological distress, and turnover intention, as well as workplace bullying as a particularly severe outcome.

All stressors can be negative, but some are more negative than others. That is one tenet of the challenge–hindrance stressor framework (CHSF; [Cavanaugh et al., 2000](#); [Podsakoff et al., 2023](#)). The CHSF is rooted in the transactional model of stress ([Lazarus and Folkman, 1984](#)), which proposes that individuals appraise their environment in terms of relevance for well-being (primary appraisal) and coping resources (secondary appraisal). Primary appraisals may involve harm or loss, threat, or opportunities for growth. Thus, stressors can be evaluated as positive or negative—perceived as challenges or hindrances ([Podsakoff et al., 2023](#)). In the CHSF, challenge stressors are demands with the potential to foster personal development, such as complex tasks or high responsibility. Hindrance stressors are demands that obstruct goal attainment (e.g. role stress, insufficient resources).

Job stressors affect health and well-being ([Ganster and Rosen, 2013](#)). According to the work environment hypothesis ([Einarsen et al., 1994](#)), such work environment factors also play a central role in the development of workplace bullying, a view that continues to receive support in contemporary bullying research (e.g. [Quinn et al., 2025](#)). Given its well-documented consequences for health and well-being ([Boudrias et al., 2021](#); [Verkuil et al., 2015](#)), workplace bullying represents one of the most severe outcomes associated with deficiencies in the work environment ([Einarsen et al., 2020](#)). Research has examined how challenge and hindrance stressors influence outcomes such as job satisfaction and psychological distress ([LePine, 2022](#)). In bullying research, most stressors align with hindrance stressors (e.g. role conflict, role ambiguity), and consistently show strong associations with bullying ([Salin and Hoel, 2020](#)). In contrast, findings for challenge stressors (e.g. workload, responsibility) are mixed—some significant, others not (e.g. [Zahlquist et al., 2019](#)). Notably, almost all studies have assumed linearity, and few have applied the CHSF explicitly. Moreover, to my knowledge, no studies have tested whether interactions between challenge and hindrance stressors influence bullying risk, or whether nonlinear associations may explain inconsistent results. This positions the present study at the intersection of the CHSF and bullying research by examining whether stressors traditionally studied as antecedents of bullying differ in their associations with bullying depending on their type, level, and combination. Identifying such thresholds can clarify when conditions foster engagement versus strain, making them directly relevant for workplace risk assessment and intervention. Longitudinal evidence has also shown that associations between role stressors and outcomes such as job satisfaction can change direction over time ([Ritter et al., 2016](#)), underscoring the importance of investigating potential nonlinear patterns.

Previous research has examined nonlinear associations between challenge stressors and work outcomes, both within the CHSF (e.g. [Podsakoff, 2008](#)) and more broadly (e.g. [Xie and Johns, 1995](#); [Ji et al., 2024](#)). Yet most CHSF-based studies assume linearity ([LePine, 2022](#)), and where tested, nonlinear effects have been inconsistent (e.g. [Cavanaugh et al., 1998](#)). This may reflect their modest incremental variance, although such effects remain valuable for identifying thresholds where demands shift from beneficial to harmful, informing theory and interventions. More broadly, findings on challenge stressors and the CHSF’s central premise—that they can produce both positive and negative outcomes—remain inconclusive. Critics have argued that the framework should be abandoned in favour of traditional appraisal models, arguing that both challenge and hindrance stressors are consistently linked to negative outcomes ([Mazzola and Disselhorst, 2019](#)) or that challenge stressors show no consistent pattern across types of strain ([Horan et al., 2020](#)).

Most CHSF research has examined challenge and hindrance stressors separately, although their combined effect, or total stressor load, likely shapes appraisals. Outcomes may depend not only on the growth potential of challenge stressors but also on co-occurring demands ([LePine, 2022](#)). Mixed findings ([Horan et al., 2020](#); [Mazzola and Disselhorst, 2019](#)) do not contradict the framework but reflect its premise: challenge stressors can foster growth, yet this potential is shaped by other demands ([Hobfoll, 2001](#)). Studying challenge and hindrance

stressors together is therefore essential, as their interplay may better explain outcome variation (Pearsall *et al.*, 2009).

The aim of this study was to examine nonlinear associations and identify thresholds at which challenge stressors shift from positive to negative, from grounds for growth to a threat—with a particular focus on subsequent workplace bullying as a key outcome. Job satisfaction, psychological distress, and turnover intent were also analysed prospectively, with bullying treated as the most critical indicator of harm. Specifically, I tested whether hindrance stressors transform challenge stressors into conditions that foster threat or harm. Nonlinear associations for challenge stressors were examined throughout—an aspect rarely addressed (O'Brien and Beehr, 2019), although proposed in early draughts of the CHSF (Cavanaugh *et al.*, 1998).

Appraisal and resources

Although the CHSF originates from the appraisal tradition (Lazarus and Folkman, 1984), most empirical CHSF studies have focused on challenge and hindrance stressors as characteristics of job demands rather than on individuals' appraisals of those demands (LePine, 2022). Appraisal is nevertheless central to the theoretical foundation of the framework and is shaped by factors such as self-efficacy, task importance, and mood (O'Brien and Beehr, 2019). Consequently, the same stressor may be perceived differently across individuals and situations. For example, workload may be experienced as a challenge by one employee but as a hindrance by another (Li *et al.*, 2022; Webster *et al.*, 2011).

Reliance on appraisal also creates a methodological challenge, as the classification of stressors may vary across individuals rather than reflect stable characteristics of the work environment (O'Brien and Beehr, 2019). As noted by Hobfoll (2001), an exclusive focus on appraisal may limit the ability to generalise findings to groups or systems, as it neglects the possibility that appraisals may be shared or culturally scripted.

In the present study, challenge and hindrance stressors are conceptualised as characteristics of job demands rather than as individual appraisals. This approach is consistent with most empirical CHSF research (LePine, 2022) and shifts attention from how stressors are interpreted to the conditions under which they are associated with favourable or unfavourable outcomes. Challenge stressors are defined as demands with growth *potential*, yet this does not imply that they will always produce positive outcomes. Depending on their level and on the presence of other demands, they may also be associated with strain and other adverse consequences (e.g. Pearsall *et al.*, 2009).

To understand these conditions, the present study draws on conservation of resources theory (COR; Hobfoll, 1989). According to COR, stress outcomes depend on whether demands contribute to resource gain or resource loss. Challenge stressors may promote growth and development, but they also require substantial investments of time and energy. When such investments fail to yield sufficient returns, stress and strain may result.

Central to COR is that individuals strive to gain, maintain, and protect resources, and stress arises when resources are threatened, lost, or investments fail to yield gain (Hobfoll, 2001). For challenge stressors, this is particularly relevant because growth depends on the successful mobilisation of personal resources, which may trigger stress when such efforts fail to produce the expected outcomes. Conversely, overcoming high workload or difficult tasks may increase self-efficacy and social approval (O'Brien and Beehr, 2019). COR also proposes that resource loss is more salient than resource gain (Hobfoll, 2001), consistent with the notion that “bad is stronger than good” (Baumeister *et al.*, 2001). Consequently, high levels of hindrance stressors may outweigh the potential benefits of challenge stressors, making their combination particularly unfavourable (Pearsall *et al.*, 2009).

Nonlinearity

In the working paper outlining the CHSF, Cavanaugh *et al.* (1998) hypothesised curvilinear associations between challenge stressors and outcomes such as job satisfaction, while

predicting linear effects for hindrance stressors. In the published paper (Cavanaugh *et al.*, 2000), these hypotheses were removed. The original results showed a significant curvilinear link between challenge stressors and job satisfaction, but not for job search or turnover (Cavanaugh *et al.*, 1998), and none for hindrance stressors.

Nonlinearity in job demands and outcomes has been noted in activation theory (Gardner and Cummings, 1988), which holds that performance peaks at an optimal activation level, while lower or higher levels reduce it. Similarly, Xie and Johns (1995) argued that low demands may undermine meaningfulness, whereas high demands can exceed coping ability. The CHSF suggests this relationship does not apply uniformly across demands (Cavanaugh *et al.*, 1998). Low challenge stressors (e.g. lack of responsibility) may reduce meaningfulness or reflect suboptimal activation (Gardner and Cummings, 1988), producing negative outcomes. By contrast, low hindrance stressors would not necessarily generate adverse effects.

Gerich and Weber (2020) found nonlinear associations between intensity and challenge appraisal for task complexity, responsibility, and time pressure. Chung-Yan (2010) tested nonlinear effects of job complexity on job satisfaction, turnover intention, and well-being, but found none, likely due to a small convenience sample. Chen *et al.* (2024) found nonlinear associations between two social stressors and job satisfaction, though effects varied across cultures. The study was, however, small and limited to nurses. Podsakoff (2008) found limited support for nonlinear associations between challenge stressors and outcomes such as job satisfaction and strain in a sample of 164 insurance employees. Overall, findings are mixed, with most studies relying on small samples, limiting statistical power.

Workplace bullying and challenge and hindrance stressors

Workplace bullying refers to persistent and systematic negative treatment of an individual by others at the workplace, where the target struggles to defend themselves or stop the mistreatment (Einarsen *et al.*, 2020). Unlike isolated incidents of harassment—such as incivility—bullying is characterised by repetition and escalation (Rosander *et al.*, 2024). Ongoing exposure can lead to exhaustion and helplessness, with no perceived way to escape (Rosander and Nielsen, 2023; Samnani, 2013). This loss of control contributes to serious outcomes, including psychological distress, long-term sick leave, exclusion from working life, and suicidal ideation (e.g. Boudrias *et al.*, 2021; Verkuil *et al.*, 2015).

A key antecedent is the inability to cope with frustration from unmet expectations—whether self-imposed or set by others (Baillien *et al.*, 2009). Poorly managed frustration may result in socially unacceptable behaviour, while unmet performance expectations can frustrate co-workers, both of which may trigger aggression and mistreatment. Frustration and failed expectations, often linked to role conflict or ambiguity (Salin and Hoel, 2020), may also generate interpersonal conflict that can escalate into bullying (Einarsen, 1999).

Hindrance stressors tend to affect employees similarly, whereas challenge stressors mainly affect those who struggle to overcome them. Hindrance stressors such as role conflict or ambiguity often signal broader workplace issues. By contrast, difficulties with challenge stressors may be more individual. Thus, bullying risk may be greater for hindrance stressors, which more readily create conditions for both targets and perpetrators. Challenge stressors mainly increase the risk when expectations are unmet or workload becomes overload. This pattern is consistent with findings that hindrance stressors show stronger links with a wide range of outcomes (LePine *et al.*, 2005).

Some bullying studies have considered aspects of the CHSF, though not as a primary focus (e.g. Zahlquist *et al.*, 2019). Many others have examined factors such as workload, role ambiguity, and role conflict in relation to bullying without linking them to the CHSF (see Salin and Hoel, 2020). The work environment hypothesis (Einarsen *et al.*, 1994) has highlighted hindrance stressors as key antecedents. Some studies have focused only on hindrance stressors (e.g. Balducci *et al.*, 2012; Einarsen *et al.*, 2018), and bullying itself has been described as a hindrance stressor (Einarsen *et al.*, 2018). This complicates matters, as hindrance stressors

would then both cause and constitute bullying. [Tuckey et al. \(2015\)](#) distinguished hindrance from threat stressors, with the latter referring to ongoing risks of harm and loss, framing bullying as a threat stressor. The present study does not determine whether bullying should be classified as a threat stressor. Rather, it examines when a challenge stressor may shift from being beneficial to increasing the risk of harm. In the terminology of [Tuckey et al. \(2015\)](#), the study therefore investigates when challenge stressors may heighten the risk of exposure to a threat stressor, depending on hindrance levels.

Hypotheses

In general, both challenge and hindrance stressors are expected to relate positively to strain ([Podsakoff et al., 2023](#)). From a COR perspective ([Hobfoll, 1989, 2001](#)), strain arises when resources are threatened or invested without sufficient gain. This leads to the first hypothesis. It should be noted that all hypotheses refer to associations between stressors assessed at baseline and outcomes assessed at follow-up.

- H1.* Both challenge and hindrance stressors are positively associated with perceived stress at work.

For challenge stressors, association with strain and job attitudes may be nonlinear ([Cavanaugh et al., 1998](#); [Podsakoff, 2008](#)). High levels may cause overload, while low levels may reduce meaningfulness. By contrast, hindrance stressors are expected to show linear associations, with higher levels linked to less favourable outcomes. Thus, I hypothesise:

- H2.* Challenge stressors have nonlinear (quadratic) associations with (a) job satisfaction, (b) psychological distress, and (c) turnover intent, such that moderate levels are associated with the most favourable outcomes, whereas lower and higher levels are associated with less favourable outcomes.
- H3.* Hindrance stressors have linear associations with (a) job satisfaction, (b) psychological distress, and (c) turnover intent, such that higher levels are associated with less favourable outcomes.

Previous research links job stressors to workplace bullying ([Einarsen et al., 1994](#)), but it remains unclear whether certain combinations are particularly detrimental ([Pearsall et al., 2009](#)). I propose that combinations of challenge and hindrance stressors may heighten the bullying risk. Hindrance stressors are expected to increase the risk generally, whereas challenge stressors do so primarily when hindrance stressors are high. Thus, I hypothesise the following:

- H4.* The nonlinear effect of challenge stressors on bullying behaviours is moderated by hindrance stressors. Specifically, challenge stressors show little or no association with bullying at low levels of hindrance stressors, whereas the association becomes increasingly U-shaped as hindrance stressors increase.

Methods

The present study employed a prospective two-wave panel design based on a probability sample of the Swedish workforce. Statistics Sweden (a governmental agency) collected baseline data through an online survey in autumn 2024 ($n = 3,307$) and follow-up in spring 2025, seven months apart ($n = 2,024$). The time lag was considered suitable for capturing prospective changes in workplace outcomes, particularly workplace bullying, which typically develops over time rather than as an immediate reaction to stressful working conditions ([Einarsen et al., 2020](#)). The agency managed all participant interactions, and supplemented the dataset with register information, including registered sex and age. All participants received sufficient information to provide informed consent. The study was approved by the Swedish Ethical Review Authority (Protocol No. 2023–06603–01).

Participants

There were 42% men and 58% women. The mean age was 49.44 years ($SD = 10.50$). Participants had worked at their current workplace for 11.02 years ($SD = 9.66$), and 16% held a managerial position. In total, 96% had a permanent contract. About half of the participants (51%) had a university degree, 33% had completed upper secondary education, and 16% had completed compulsory education.

Measures

Challenge stressors were measured with four items capturing core aspects of the challenge stressor construct—responsibility, task complexity, and workload (Podsakoff *et al.*, 2023): “I have a lot of responsibility in my job”, “I have difficult and demanding work tasks”, “I find it difficult to keep up with all my work tasks”, and “I am under constant time pressure due to a high workload”. Measured at T1, Cronbach’s alpha (α) = 0.73.

Hindrance stressors were measured with four items covering role conflict, ambiguity, and inadequate resources (Podsakoff *et al.*, 2023): “I often have to do things in a way I believe should be done differently”, “My role, responsibilities, and tasks at work are very unclear and ambiguous”, “I am often assigned tasks without sufficient resources to complete them”, and “I am often disturbed or interrupted in my work” (T1: $\alpha = 0.76$).

Workplace bullying was assessed with the Swedish version of the Negative Acts Questionnaire–Revised (NAQ–R; Einarsen *et al.*, 2009; Rosander *et al.*, 2024), comprising 22 items describing unwanted behaviours at work. Respondents rated the frequency with which they had been exposed to each behaviour during the past six months on a five-point scale from *never to daily*. An example item is: “Being ignored or excluded” (T2: $\alpha = 0.89$).

Job satisfaction was measured with four items from the Psychosocial Work Environment Questionnaire (Rosander and Blomberg, 2018), capturing overall job enjoyment, including stimulating tasks and pride in work. An example item is: “I like my current job” (T2: $\alpha = 0.90$).

Turnover intent was measured with three items based on Sjöberg and Sverke (2000), covering intention to leave and job search. An example item is: “I am actively looking for other jobs” (T2: $\alpha = 0.86$).

All measures described above, except the NAQ–R, used a seven-point Likert scale, and mean scores were computed.

Psychological distress was measured with the Hospital Anxiety and Depression Scale (HADS; Zigmond and Snaith, 1983), consisting of 14 items. Responses were given on a four-point scale from *not at all* to *most of the time*. An example item is: “I feel tense or ‘wound up’” (T2: $\alpha = 0.91$).

Perceived stress was measured at T2 with a single item on overall perceived stress: “Have you felt stressed at work during the past month?”. Responses were given on a five-point scale ranging from *not at all* to *almost all the time*.

Sex, age, and managerial position were used as control variables. Sex and age were obtained from the Swedish National Population Register, and managerial position was measured by the question: “Do you hold a managerial position?” (*yes/no*). Sex and age were included because both have been linked to workplace bullying (Rosander *et al.*, 2020; Salin, 2021). Managerial position was included since challenge stressors often involve responsibility.

Statistical analyses

Stata 19.5 was used, except for a supplemental test of Hypothesis 4 with Hayes’ (2022b) PROCESS macro (v. 4.3.1) in SPSS 29. Hypotheses 1–3 were tested using linear and quadratic (non-linear) regression. Linear and quadratic effects were tested simultaneously to assess whether a quadratic model provided a better representation of the associations than a linear model. Hypothesis 4 was tested with a linear moderation model, with hindrance stressors moderating the quadratic effect of challenge stressors on bullying (Hayes, 2022a). Both

predictor and moderator were mean-centred. Unstandardised coefficients (b) are therefore based on mean-centred predictors, whereas standardised coefficients (β) were obtained using Stata's beta option. PROCESS was used to probe conditional effects with the Johnson-Neyman technique, identifying regions of significance and testing effects at -1 SD, the mean, and $+1$ SD of hindrance demands (Figure 2). All regressions used Huber-White robust standard errors and controlled for sex, age, and managerial position. Additional results are provided in the [Supplementary Materials](#), along with an attrition analysis.

Results

Table 1 shows means, standard deviations, and intercorrelations of study variables. All three controls correlated significantly with key variables, justifying their inclusion. As an initial test of Hypothesis 1, zero-order correlations showed significant associations between challenge stressors ($r = 0.51$) and hindrance stressors ($r = 0.43$) with perceived stress.

Regression analyses predicting perceived stress at T2 adjusting for sex, age, and managerial position gave similar results as the initial test: challenge stressors at T1, $F(4, 2005) = 190.79, p < 0.001, \beta = 0.50, p < 0.001$; hindrance stressors at T1, $F(4, 2005) = 132.29, p < 0.001, \beta = 0.41, p < 0.001$ —providing further support for Hypothesis 1.

To test Hypothesis 2, quadratic regressions were conducted for challenge stressors at T1 predicting (a) job satisfaction, (b) psychological distress, and (c) turnover intent at T2, controlling for sex, age, and managerial position. Significant nonlinear effects were found for job satisfaction, $F(5, 2008) = 22.84, p < 0.001, \beta = -0.80, p < 0.001$; psychological distress, $F(4, 2008) = 47.25, p < 0.001, \beta = 0.56, p < 0.001$; and turnover intent, $F(5, 2006) = 27.49, p < 0.001, \beta = 0.93, p < 0.001$ —supporting Hypothesis 2. These associations are shown in panels A–C of Figure 1.

As a further test of Hypothesis 1, quadratic regressions were conducted for challenge and hindrance stressors at T1 predicting perceived stress at T2. A significant nonlinear association was found for challenge stressors, $F(5, 2004) = 159.79, p < 0.001, \beta = 0.45, p < 0.001$, but not for hindrance stressors, $F(5, 2004) = 107.81, p < 0.001, \beta = -0.04, p = 0.657$. Hindrance stressors, however, showed a significant linear effect, $\beta = 0.45, p < 0.001$. As illustrated in panel D of Figure 1, the curvilinear effect of challenge stressors mainly reflects a weaker initial relation to stress, but at high levels both stressors yield similar stress. These findings further support Hypothesis 1.

To test Hypothesis 3, the same approach as in Hypothesis 2 was applied, but only linear regressions were first conducted, as linear effects were hypothesised for hindrance stressors. Significant associations were found for all three outcomes, controlling for sex, age, and managerial position: job satisfaction, $F(4, 2009) = 92.88, p < 0.001, \beta = -0.36, p < 0.001$; psychological distress, $F(4, 2009) = 95.41, p < 0.001, \beta = 0.36, p < 0.001$; and turnover intent, $F(4, 2007) = 96.73, p < 0.001, \beta = 0.38, p < 0.001$ —supporting Hypothesis 3.

Nonlinear effects were also tested. For job satisfaction, $F(5, 2008) = 75.07, p < 0.001$, only the linear effect was significant ($\beta = -0.24, p < 0.001$); not the nonlinear effect ($\beta = -0.12, p = 0.220$). For psychological distress, $F(5, 2008) = 83.14, p < 0.001$, only the linear effect was significant ($\beta = 0.27, p = 0.008$); not the nonlinear effect ($\beta = 0.10, p = 0.355$). For turnover intent, $F(5, 2006) = 80.49, p < 0.001$, only the nonlinear effect was significant ($\beta = 0.44, p < 0.001$), whereas the linear effect was not ($\beta = -0.06, p = 0.544$). Panels A–C of Figure 1 show these results alongside corresponding challenge stressor effects.

As shown in Figure 1, all nonlinear associations (A–C) for challenge stressors were significant ($p < 0.001$) and showed a clear curvilinear pattern, with the most favourable outcomes at moderate levels. Hindrance stressors only showed a nonlinear effect for turnover intent, but it mainly reflected stronger association at higher levels (i.e. a monotonic relationship). Together, the findings supported Hypotheses 2 and 3.

Finally, to test Hypothesis 4, the quadratic effect of challenge stressors at T1 on bullying behaviours at T2 was examined with hindrance stressors as a (linear) moderator. Controlling for sex, age, and managerial position, the analysis showed a significant effect, $F(8,$

Table 1. Means, standard deviations, and intercorrelations for the study variables

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Sex	0.57	0.49	–								
2. Age	49.44	10.50	0.01 ^{ns}	–							
3. Position	0.16	0.36	–0.10	0.08	–						
4. ChaS (T1)	4.42	1.14	0.07 ^{**}	–0.07 ^{**}	0.15	–					
5. HinS (T1)	3.32	1.18	0.04 ^{ns}	–0.12	0.07 ^{**}	0.57	–				
6. NAQ–R (T2)	1.21	0.30	0.09	–0.10	–0.03 ^{ns}	0.28	0.45	–			
7. JS (T2)	5.47	1.09	0.01 ^{ns}	0.16	0.12	–0.01 ^{ns}	–0.36	–0.40	–		
8. TI (T2)	2.54	1.67	0.04 ^{ns}	–0.18	–0.04 ^{ns}	0.13	0.39	0.49	–0.65	–	
9. PD (T2)	0.60	0.49	0.06 ^{**}	–0.20	–0.08	0.26	0.38	0.49	–0.49	0.43	–
10. Stress (T2)	1.90	1.18	0.14	–0.13	0.03 ^{ns}	0.51	0.43	0.40	–0.29	0.33	0.49

Note(s): Position = managerial position. ChaS = challenge stressors. HinS = hindrance stressors. NAQ–R = workplace bullying. JS = job satisfaction. TI = turnover intent. PD = psychological distress. Stress = perceived stress. All correlations significant at $p < 0.001$, except where indicated: $**p < 0.01$. ns = not significant

Source(s): Author's own work

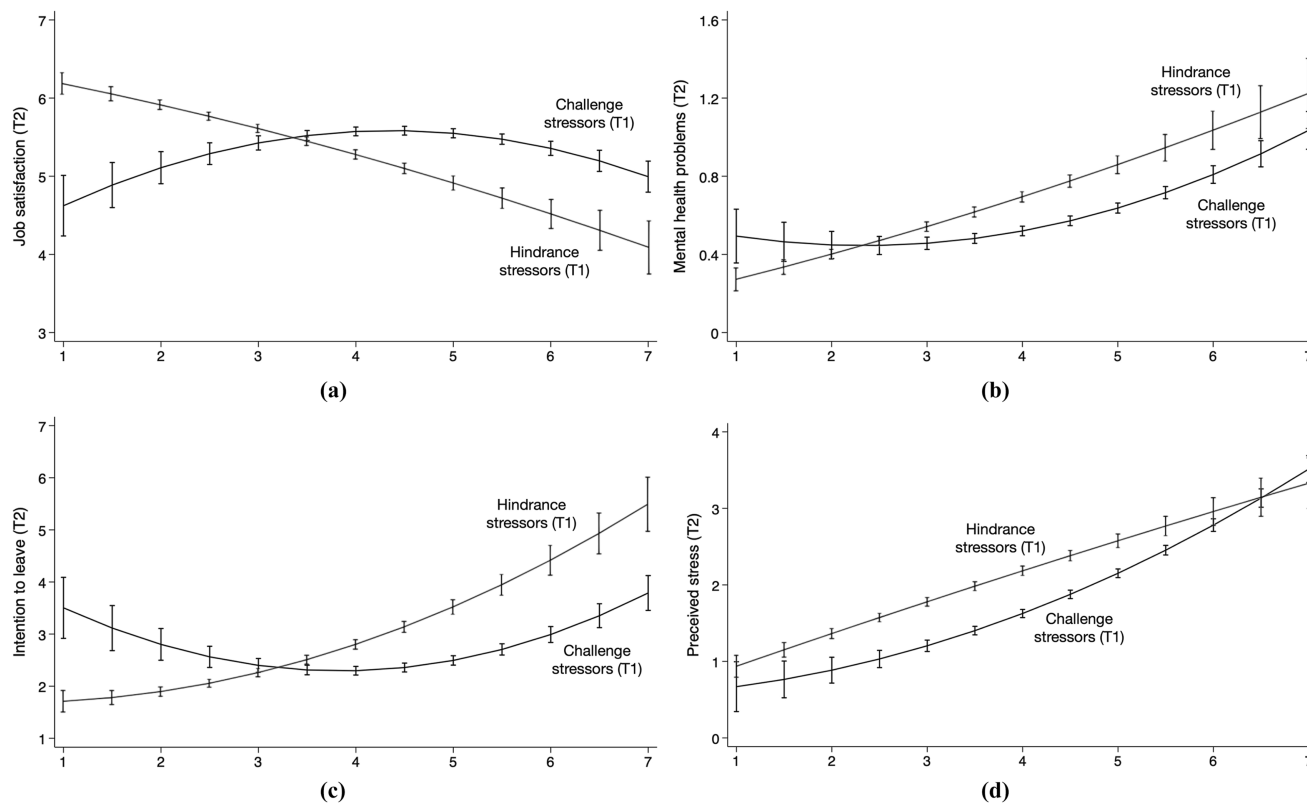


Figure 1. Non-linear associations for challenge and hindrance demands at T1 with regard to (a) job satisfaction, (b) psychological distress, (c) turnover intent, and (d) perceived stress at T2. Note. Two separate analyses in each graph. Huber-White robust standard errors. Covariates: sex, age, managerial position. Source: Author's own work

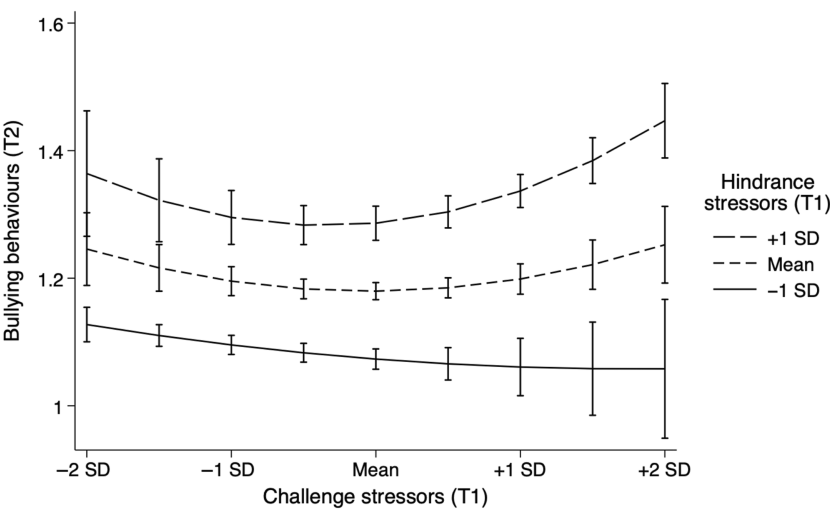


Figure 2. Linear moderation by hindrance stressors of a quadratic effect of challenge stressors at T1 on bullying behaviours at T2. *Note.* Huber–White robust standard errors. Covariates: sex, age, managerial position. Source: Author’s own work

2002) = 47.50, $p < 0.001$, with a significant interaction, $\beta = 0.10$, $p = 0.021$ (Table 2; Figure 2). A Johnson-Neyman test indicated that challenge stressors became curvilinear at -0.60 below the mean of hindrance stressors, with the effect more pronounced at higher hindrance levels. At -1 SD, no curvilinear relationship appeared, but at the mean and $+1$ SD, the effect was increasingly significant. These results support Hypothesis 4.

Discussion

The aim of this study was to investigate the nonlinear associations between challenge stressors and key work outcomes, particularly workplace bullying, and whether this association depends on hindrance stressors. By definition, challenge stressors can have positive effects,

Table 2. Moderation analysis predicting bullying behaviours at T2

Variables (T1)	b	SE b	95% CI	β	<i>t</i>	
Challenge stressors (<i>ChaS</i>)	0.001	0.008	[-0.014, 0.017]	0.006	0.18	$p = 0.854$
<i>ChaS</i> $\times$ <i>ChaS</i>	0.013	0.005	[0.003, 0.028]	0.080	2.77	$p = 0.006$
Hindrance stressors (<i>HinS</i>)	0.090	0.008	[0.075, 0.104]	0.361	11.97	$p < 0.001$
<i>ChaS</i> $\times$ <i>HinS</i>	0.014	0.007	[0.000, 0.028]	0.074	1.98	$p = 0.048$
<i>ChaS</i> $\times$ <i>ChaS</i> $\times$ <i>HinS</i>	0.008	0.003	[0.001, 0.015]	0.102	2.30	$p = 0.021$
Sex	0.034	0.011	[0.012, 0.056]	0.057	3.02	$p = 0.003$
Age	-0.001	0.001	[-0.002, 0.000]	-0.033	-1.58	$p = 0.114$
Managerial position	-0.037	0.014	[-0.066, -0.009]	0.046	-2.57	$p = 0.010$

Note(s): Unstandardised coefficients (*b*) are based on mean-centred predictors. Standardised coefficients (β) represent SD-standardised effects computed using Stata’s beta option. Reported standard errors are Huber–White robust. The overall model was significant, $F(8, 2002) = 47.50$, $p < 0.001$, $R^2 = 0.240$. Values in brackets represent 95% confidence intervals for *b*. Bullying behaviours were measured using mean NAQ–R scores ($M = 1.24$, $SD = 0.33$)

Source(s): Author’s own work

but their benefits may be limited. When demands become excessive, even initially positive situations can turn negative, especially in combination with other stressors.

Challenge stressors were positively associated with subsequent perceived stress; although slightly nonlinear, both stressors showed similar associations at high levels ([Hypothesis 1](#)). For follow-up job satisfaction, psychological distress, and turnover intent, the patterns differed. Challenge stressors showed quadratic effects, with curvilinear associations indicating the most favourable outcomes at moderate levels ([Hypothesis 2](#)). Hindrance stressors, by contrast, showed mainly linear associations, with turnover intent showing a weak monotonic nonlinearity ([Hypothesis 3](#)).

Finally, the association between challenge stressors at baseline and bullying at follow-up depended on hindrance stressors. At low hindrance levels, challenge stressors were unrelated to bullying. At higher hindrance levels, the association became nonlinear, with greater bullying risk at low and high challenge levels, and the most favourable outcomes at moderate levels ([Hypothesis 4](#)).

Theoretical implications

By integrating the CHSF with the work environment hypothesis, the present study moves bullying research beyond identifying general psychosocial risk factors toward specifying when different stressor configurations are most strongly associated with subsequent exposure. I tested assumptions of nonlinearity in the association between challenge stressors and key work outcomes—an idea suggested previously (e.g. [Podsakoff, 2008](#)) but not tested in a large probability sample. Smaller samples, assumptions of linearity, and the modest variance explained by nonlinear effects may partly account for inconsistent findings in prior research ([Horan et al., 2020](#)). The present study can therefore be viewed as a further test of the CHSF, particularly regarding how challenge stressors relate to strain and other outcomes. The findings showed nonlinear associations with job satisfaction, psychological distress, and turnover intent, underscoring the importance of nonlinearity. The results support the CHSF and its core tenet that challenge stressors can have positive effects, but also suggest these effects are bounded, with both low and high levels linked to less favourable outcomes and the most positive outcomes at moderate levels.

In a novel application of the CHSF, this study examined challenge and hindrance stressors simultaneously—incorporating nonlinearity—to understand their role in workplace bullying. The findings extend the work environment hypothesis ([Einarsen et al., 1994](#)) by showing how stressors interact in explaining bullying. While job stressors in general have been seen as risk factors ([Salin and Hoel, 2020](#)), the results suggest they do not function uniformly. Prior studies have shown inconclusive evidence for challenge stressors such as workload (e.g. [Zahlquist et al., 2019](#)). The present findings clarify this: challenge stressors alone did not predict bullying risk, but in combination with high hindrance stressors they showed the strongest association. At the same time, hindrance stressors alone accounted for the largest share of explained variance in bullying.

The nonlinear association between challenge stressors and bullying offers important insights, showing higher bullying risk at both low and high challenge levels when hindrance stressors are high—though likely for different reasons. At high challenge levels, ambitious goals, heavy workload, tight deadlines, and high responsibility may become unmanageable and lead to overload ([O'Brien and Beehr, 2019](#)). Failure to meet expectations may then create frustration that, if poorly managed, is directed at the target as negative treatment ([Baillien et al., 2009](#)). Such behaviour is not a constructive response to stress, but bullying rarely stems from rational decision-making. Frustration can also trigger conflict that, if unmanaged, escalates into bullying as the target finds it increasingly difficult to defend themselves ([Einarsen, 1999](#)).

In line with [Baillien et al.'s \(2009\)](#) three-way model, targets may also respond to frustration maladaptively—for example, by missing deadlines and acting in socially inappropriate or

norm-violating ways—which can trigger aggression from others (Tedeschi and Felson, 1994). At low challenge levels, jobs may be seen as meaningless or monotonous, lowering satisfaction and engagement. Combined with high hindrance stressors, this can add to frustration and undesirable behaviour, again provoking aggression. A similar pattern appeared even at lower hindrance levels, where the relation between challenge stressors and bullying was more linear, with the strongest bullying association at low challenge levels.

These processes can be understood from a social interactionist perspective (Tedeschi and Felson, 1994), which views aggression as goal-directed, coercive, and intentional behaviour aimed at achieving valued outcomes, often in response to perceived norm violations—whether distributive, procedural, or interactional. Failing to meet expectations for productivity or conduct may thus trigger such behaviour. Importantly, goal-directedness here does not imply an intention to bully. In the European tradition, perpetrator intent is less central (Einarsen *et al.*, 2020); what matters is the target's perception, as this elicits strong emotional and psychological reactions. Rather than aiming to bully, aggression may be intended to correct behaviour seen as violating group norms—that is, to enforce expectations—but if handled poorly, it may manifest as bullying.

Bullying behaviour triggered by a combination of challenge and hindrance stressors may introduce a threat stressor, as described by Tuckey *et al.* (2015), also termed a social stressor (Kern *et al.*, 2020). This can push the target into a vicious cycle, increasing the risk of being seen as violating norms by perpetrators. In turn, this makes it harder to meet expectations for productivity and conduct, raising the likelihood of further escalation.

From a resource-based perspective (e.g. Hobfoll, 2001), hindrance stressors require resources to overcome obstacles to goal attainment, whereas challenge stressors require resources for the actual goal-directed behaviour (Kronenwett and Rigotti, 2019). Thus, in the full work context, employees must first manage hindrance stressors before it becomes meaningful to invest further resources in challenges. This may explain the stronger associations of hindrance stressors with job satisfaction, psychological distress, turnover intent, and bullying. When threats or social stressors such as bullying are also present, resources may be further depleted, impairing the ability to cope with both stressor types and potentially creating a downward spiral of resource loss. Overcoming hindrance stressors may restore stability, while overcoming challenge stressors can promote growth, self-efficacy, and resource strengthening. Bullying, however, makes goal attainment increasingly difficult and can pull individuals back into loss. COR theory (Hobfoll, 2001) emphasises that resource loss is more salient than gain, and depleted individuals are both more vulnerable to further loss and less able to initiate gain.

To better understand their impact on bullying, an additional question is whether challenge and hindrance stressors exist on the same “scale”. Challenge stressors are usually tied to individual roles—for example, responsibility, workload, or task complexity—whereas hindrance stressors often reflect features of the broader work environment. Challenge stressors can thus be seen as personal challenges, while hindrance stressors create obstacles affecting many, generating wider frustration. Failing to meet challenge demands may reduce individual satisfaction, whereas hindrance stressors can foster distrust, suspicion, and antagonism, contributing to a hostile work climate (Rosander and Salin, 2023). These distinctions should be considered when assessing the effects of work stressors, particularly in relation to bullying risk, but also job satisfaction, psychological distress, and turnover intent.

Previous studies have produced inconclusive results on the potential positive effects of challenge stressors (Mazzola and Disselhorst, 2019; Pindek *et al.*, 2024). One reason may be that few studies have examined how individuals appraise these stressors. From this view, outcomes depend on appraisal (Webster *et al.*, 2011), which can make challenge stressors yield either positive or negative effects. Rather than contradicting the framework, this reflects its premise—that challenge stressors carry growth potential. The present study, however, highlights two further considerations: their nonlinear nature and the need to study them in

context. A fuller understanding requires examining challenge and hindrance stressors together, as well as including social stressors.

Practical implications

The study highlights several points for practitioners. Most importantly, it underscores the CHSF's core idea (Cavanaugh *et al.*, 2000)—that not all stressors are alike. Risk assessments and interventions should identify which demands are hindrances and challenges. Beyond classification, balance is crucial: other stressors must not create obstacles that turn challenges into overwhelming demands. It is not workload itself that is problematic, but when it becomes overload (O'Brien and Beehr, 2019).

Different stressors also affect employees differently—not only through appraisal but also through how they are anchored in the organisation. Challenge stressors are tied to individual roles and responsibilities, whereas hindrance stressors often reflect structural or organisational problems. Equally important, the potential for positive outcomes from managing challenge stressors depends on hindrance levels; when these are too high, they erode the resources needed even for positively perceived demands.

Practitioners should also watch for early warning signs of bullying. A combination of high hindrance stressors and very low or very high challenge stressors constitutes a risk zone for mistreatment and interpersonal tension. This underscores the need for nuanced assessments, beyond general workload, focussing on the quality and interplay of stressors. More broadly, the findings support recommendations that efforts to prevent workplace bullying should target organisational conditions and work design rather than focussing exclusively on individual behaviour (Hodgins *et al.*, 2014; Dollard *et al.*, 2026).

Strengths and limitations

A key strength of this study is its large, prospective national probability sample. This is particularly important as prior research on nonlinear effects of challenge stressors has often relied on smaller, convenience-based samples (e.g. Cavanaugh *et al.*, 1998; Podsakoff, 2008). By using a more robust sample, the present study both supports earlier indications and provides stronger evidence for curvilinear relationships.

There are, however, limitations. All data were self-reported, which may raise concerns about social desirability and common method bias (Podsakoff and Organ, 1986). A post hoc Harman's single-factor test, with all items entered into a principal component analysis, showed that the first unrotated factor accounted for only 27% of the variance, suggesting that common method variance is unlikely to explain the associations. Furthermore, baseline bullying was not controlled for, as the aim was to predict subsequent exposure rather than residual change. Controlling for prior levels would risk overcontrol, given the high temporal stability of bullying. This challenge is amplified when testing non-linear effects, which are generally difficult to detect.

Attrition analyses indicated some selective dropout related to age and baseline bullying exposure; however, the overall explanatory power was low, and attrition was unlikely to substantially bias the prospective findings (see [Supplementary Materials](#)).

Conclusions

The study contributes to a more nuanced understanding of how job stressors interact and relate to workplace outcomes. Drawing on the challenge–hindrance stressor framework and the conservation of resources theory, the findings show that stressors differ not only in their effects but also in their interaction—particularly regarding workplace bullying. Hindrance stressors were consistently linked to negative outcomes, including greater bullying risk, whereas challenge stressors showed nonlinear associations, with the most favourable outcomes at moderate levels. The risk of bullying was highest when challenge stressors coincided with high

hindrance stressors, suggesting that too many obstacles combined with either very high or very low challenge create particularly vulnerable situations.

These findings highlight the need to understand stressors not only by intensity but also by type and interplay. This has implications for research and workplace risk assessments, underscoring the importance of identifying both the level and character of demands. In particular, the results demonstrate the value of applying the CHSF in bullying research and point to specific combinations of demands that may serve as early warning signs of mistreatment.

Supplementary material

The supplementary material for this article can be found online.

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