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RESEARCH ARTICLE

The negative relationships between employee resilience and ambiguity, complexity, and inter-agency collaboration

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Abstract

Employee resilience (ER) is often needed to face demands inherent in public sector work. Some types of demands, however, may hinder its development, rather than provide the type of challenging adversity from which resilience can develop. Public sector job demands have been a long-standing issue for public workplaces and employees but are also growing in salience as organisations face an increasingly variable, uncertain, complex, and ambiguous environment. Drawing on the Job Demands–Resources model and the challenge/hindrane stress literature, this multi-level study of Aotearoa New Zealand civil servants ($n = 11,533$) in 65 public sector organisations shows that ER is negatively affected by demands such as job insecurity, unclear job and organisational goals, and inter-agency collaboration. However, organisational resource constraints are positively associated with ER. This study identifies core PA job and organisational demands that hinder ER and offers practical implications and suggestions for further research.

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Points for practitioners:

- Job role ambiguity, job insecurity, unclear organisational goals, and inter-agency collaboration are common job and organisational demands in public sector workplaces.
- For employees, these demands are stressors that employees do not feel they control, and may therefore hinder employee resilience: the ability to learn, adapt, and leverage networks in the face of challenges.
- Surprisingly, resource constraints, where employees have to 'do more with less', might help employees develop ER.
- While inter-agency collaboration has potentially many benefits, it appears to have negative spillover effects on employees unaware of it or not involved in it.
- To encourage ER, agencies should clarify both organisational and job goals, and assure job security, control, competency development, and supervisor support.

KEYWORDS

employee resilience, goal clarity, inter-agency collaboration, job insecurity, public administration, resource constraints

1 | INTRODUCTION

Public sector organisations and their employees often experience variable, uncertain, complex, and ambiguous environment conditions (van der Wal, 2020). Events such as the COVID-19 pandemic, climate change, and other crises have accentuated these conditions and further exposed flaws in how public sector organisations cope with demands (Fay & Ghadimi, 2020; Maher et al., 2020; O'Flynn, 2021). Concurrently, a growing body of evidence shows that employee resilience (ER) underpins recovery and adaptation in the face of adverse demands and is therefore essential to address emerging public sector challenges (Kuntz et al., 2017; Näswall et al., 2019).

It is a behavioural capability characterised by learning, network-leveraging, and proactive work behaviours. It results from organisational factors such as leadership support, learning culture, and role clarity, along with individual factors, including psychological resilience and proactive personality (Cooke et al., 2019; Kuntz, 2021; Zhu & Li, 2021). While psychological resilience is trait based, ER is more ecological and stems more from workplace conditions (Näswall et al., 2019). Its development requires both adaptability and adversity, but little is known about what types of workplace adversity, as job demands, facilitate it, and what types of demand might hinder it. This

paper focuses on how common public sector job and organisational demands represent stressors that hinder ER.

ER helps sustain well-being and performance through day-to-day job demands as well as during, and in the aftermath of, significant crises (Näswall et al., 2019). Growing interest in ER research is consistent with a rising public sector emphasis on workplace well-being and on developing employee capabilities to cope with job demands and other psychosocial risks (Australian Public Service Commission, 2018). Contemporary research suggests that supportive job resources can contribute to ER in the absence of significant adverse demands, which increases the likelihood of positive adaptation when employees do face adversity. Recent studies show that ER can be developed in organisations that foster positive social exchanges, provide adequate resourcing (Kuntz et al., 2017; Malik & Garg, 2020), feature paradoxical and growth-oriented leadership (Franken et al., 2020, 2021), have innovative climates and constructive leadership, have effective knowledge management systems, and offer opportunities for development (Cooke et al., 2019; Plimmer et al., 2022).

While past research has focussed on *resources* that help develop ER, research on the impact of *demands* on ER, particularly in a public sector context, is lacking. This study relies on Job Demands–Resources (JD-R) theory (e.g. Bakker & Demerouti, 2023) and the challenge/hindrane stress literature (Van den Broeck et al., 2010) to explore the impact of work demands on ER.

This study contributes to the literature on public sector working conditions and ER in several ways. First, it examines whether demands that characterise public sector work undermine ER. Despite evidence to suggest the detrimental impact of job demands, on distal employee outcomes such as performance and burnout (Mauno et al., 2005; Peeters et al., 2021), the influence of these demands on proximal work behaviours remains poorly understood. Hence, we extend the literature by empirically testing the impact of public sector demands on ER.

Second, the study examines whether types of common public sector adversity, in the form of job and organisational demands, hinder ER, rather than provide the challenges that might support ER. Questions remain as to whether adverse demands necessarily undermine ER, or if they might instead motivate ER. Resilience reflects positive adaptation following adversity (Hartmann et al., 2020), and while many studies have connected demands with higher levels of stress, and lower satisfaction and performance (Lee, 2018; Rizzo et al., 1970; Showail et al., 2013), some have found that, for public servants, imprecise job and organisational goals, along with resource scarcity, can lead to adaptation (e.g. Davis & Stazyk, 2015; Marginson & Ogden, 2005). Specifically, it is possible that demands could prompt employees to adapt, and to 'do more with less'. Following from the first objective, this study contributes to the literature by verifying the nature of the relationships between public sector demands and resilient behaviours.

Third, our study addresses a call for research to investigate resilience at multiple levels of analysis (Branicki et al., 2019; Jaaron & Backhouse, 2014; Jong & Ford, 2016) and examines how ER is affected by both organisational and job demands (Liu et al., 2019). Here, we examine the individual-level effects of job demands (i.e. role ambiguity, job insecurity) on ER, and the influence of unclear organisational goals, inter-agency collaboration, and resource constraints on ER at the organisational level of analysis. We rely on perceptual data collected in a survey of 11,533 participants across 65 public sector employers to explore the research question: *How do job and organisational demands affect the ER of public servants?*

2 | LITERATURE REVIEW

2.1 | Employee resilience

Earlier definitions of resilience emphasised the ability to cope or bounce back in the face of crises (cf. Wagnild & Young, 1993). Recent research, however, has extended this definition to include growth and development in the face of day-to-day challenges (Liu et al., 2019; Stokes et al., 2019). In these definitions, ER involves more than just responding to crises; resilience also includes performing well, and even realising opportunities for ‘flourishing’ and lifting organisational and human capital capabilities (Kuntz et al., 2016; Tonkin et al., 2018).

This study defines ER as the behavioural capability ‘to utilise resources to continually adapt and flourish at work, even when faced with challenging circumstances’ (Kuntz et al., 2016, p. 460), and it includes developable behaviours that reflect the capacity to grow and adapt in the presence of heightened demands (Donaldson et al., 2019; Kakkar, 2019). Specifically, ER comprises three sets of behaviours: *network leveraging*, *learning*, and *adaptability*. These behaviours are interdependent and mutually reinforcing (Kuntz et al., 2017). For instance, network leveraging requires adaptability, and adapting to new situations often requires learning from networks. *Network leveraging* concerns the ability to develop networks, to collaborate and share information, and to seek and provide support as needed. When employees engage in these deliberate efforts to develop a diverse and extended pool of connections, the access to multiple perspectives enriches problem solving and social support (Cross & Cummings, 2004; Kuntz et al., 2017).

Analogous to learning orientation (Latham & Pinder, 2005), the *learning* component of ER includes behaviours such as seeking and responding effectively to feedback and continuously re-evaluating performance (Näswall et al., 2019). The capacity to solve problems, desire to master new areas of knowledge, and tendency to challenge the status quo are inherent to successfully tackling new demands and to innovate (Kuntz et al., 2017). The public sector literature highlights the importance of learning behaviours in under-resourced, dynamic, high-demand, and complex work environments, as these behaviours support continual development and accountability (Greiling & Halachmi, 2013).

The third underlying dimension of ER, *adaptability*, encompasses behaviours that reflect the ability to swiftly adjust to new or challenging demands such as high workloads and crises, and to capitalise on change toward personal and professional development (Kuntz et al., 2017). These behaviours correspond to well-known dimensions of adaptive performance, including handling emergencies and stress, dealing with uncertainty and complexity, effective problem solving, and interpersonal adaptability (Bauer et al., 2019).

Similar to psychological resilience, ER is the upshot of person–environment interactions over time. Yet, the two constructs are conceptually and operationally distinct (Näswall et al., 2019; Tonkin et al., 2018). Psychological resilience results from a combination of genetic factors, personality traits, emotional regulation, and early life experiences. ER characterises adaptive work behaviours that rely on a foundation of psychological resilience but also depend upon the availability of workplace resources and support (DeSimone et al., 2017; Hartmann et al., 2020; Kuntz, 2021). ER development *requires* that organisations create conditions for employees to capitalise on resources to manage demands. In other words, ER is not an inherent ability that predicts effective coping in adverse circumstances, but a workplace capability that develops through resource availability and use (Lin et al., 2020; Näswall et al., 2019).

But what happens when individuals operate in high-demand and resource-depleted work environments? To what extent do these environments limit employees’ ability to develop ER? These

dynamics can be explained by the JD-R model (Bakker & Demerouti, 2023;), which elucidates how an imbalance between job resources and demands affect motivational and well-being outcomes. Job demands are the psychological, physical, and social aspects of work that necessitate sustained employee effort and skill. High demands can deplete employee resources, resulting in strain, exhaustion, or even burnout. This causes employees to focus their attention on minimising risk and protecting their well-being, to the detriment of proactive and learning behaviours that ensure adaptability and innovation (Bardoel et al., 2014; Hobfoll et al., 2018). While research suggests that demands can have a motivational impact and contribute to positive organisational outcomes when adequate resources are in place (Bakker & Demerouti, 2023), the variable, uncertain, complex, and ambiguous context that characterises public sector organisations has resulted in an imbalance of demands relative to resources (Jentsch & Schnock, 2020; Schuster et al., 2020; van der Wal, 2020). Hence, it is crucial to investigate public sector employee responses to increasing job demands in the face of limited resources, specifically, how these increasing demands affect ER.

In sum, although the ER literature emphasises the positive impact of supportive organisational practices and systems on ER (Hartwig et al., 2020; Kuntz et al., 2017; Plimmer et al., 2022), it remains unclear whether high-demand working conditions undermine employees' capacity to develop and exhibit ER. In what follows, we discuss the literature that helps elucidate the relationship between job and organisational demands, and ER.

2.2 | Job and organisational demands as hindrance stressors and ER

Work demands can be viewed by employees as challenges or as hindrance stressors (Cavanaugh et al., 2000). Challenge stressors are controllable and can foster growth and development (Haar & Bardoel, 2008). For example, a high but manageable workload can create feelings of engagement and satisfaction (Casper et al., 2017). In contrast, hindrance stressors are demands that are often outside employee control and may undermine employees' ability to perform and to adapt. For instance, unclear role requirements and work goals increase employee stress and limit their capacity to select effective strategies to meet organisational aims (Sager et al., 2014; Tummers et al., 2015).

Here, we discuss how public sector job and organisational demands—role ambiguity, job insecurity, unclear organisational goals, inter-agency collaboration, and resource constraints—may represent hindrance stressors that undermine employees' ability to develop and enact ER. The demands examined in our study were selected based on three criteria: (1) the demands reflect work conditions that are variable, uncertain, complex, and ambiguous; (2) the demands potentially represent hindrance stressors because they are outside employee control; and (3) the demands span both job and organisational levels of analysis, answering calls in public administration to examine organisational phenomena from a multi-level perspective (Branicki et al., 2019; Jaaron & Backhouse, 2014; Jong & Ford, 2016; Plimmer et al., 2022). Past cross-sectional studies have identified relationships between our independent variables, often focussed, for instance, on relationships between organisational and individual goal clarity amongst senior manager respondents (Davis & Stazyk, 2016; Pandey & Wright, 2006). However, none have been studied as predictors of ER amongst lower level employees, nor examined them as collective phenomena in organisations.

2.2.1 Role ambiguity

Lack of clarity about job requirements has been classified as a job demand in the literature, and a feature of many public sector jobs (Hassan, 2013; Lee, 2018; Plimmer et al., 2017). While role ambiguity may prompt some employees, such as senior managers, to exercise discretion and explore new ways of working (Davis & Stazyk, 2015), many lower level employees will lack the control to see this as a useful challenge. Instead, they will see it as a hindrance stressor: the interpersonal conflict that often arises from unclear role boundaries (Hill et al., 2015) is emotionally exhausting (Davis & Stazyk, 2022), and increases cognitive load. Employees may respond to lack of clarity with 'withdrawal and cognitive distancing' (LePine et al., 2005, p. 771). It may thus discourage ER by lessening social support, and resource exchange, and so weaken ER by restricting learning, adaptability, and use of networks. It may also decrease motivation to accept the risk element involved in experimenting with new problem-solving approaches, and so may further deter the proactive behaviours that characterise ER (Jong, 2016; Wang et al., 2011). Hence, we hypothesise that role ambiguity hinders ER in public sector organisations.

H1: Role ambiguity is negatively related to ER.

2.2.2 Job insecurity

Job insecurity, described as fear of job loss, creates uncertainty about future job resources. It is often a feature of changing, uncertain, complex, and ambiguous environments (Nicholson, 2013). It represents a hindrance stressor that characterises many public service jobs (Höge et al., 2015; Hur & Perry, 2020; Wynen et al., 2019). Contemporary JD-R research shows that feeling unsure of one's position and continuity with the organisation is a significant job demand and represents a hindrance stressor (Darvishmotevali & Ali, 2020). Job insecurity frustrates autonomy, choice, volition, competence, and relationships and can deplete the cognitive and emotional resources needed to perform even routine activities (Vander Elst et al., 2012). The depletion of cognitive and emotional resources is expected to detrimentally affect ER by constraining social interactions, leading to resource loss, and interfering with proactive learning processes. Job insecurity has also been linked to psychological contract breach and distrust in management and the organisation (Zhao et al., 2007). It may also potentially undermine ER, by inhibiting continuous performance improvement (adaptability) and managerial support (network leveraging). We contend that the stress experienced by employees who perceive job insecurity undermines their cognitive and emotional functioning, and hence motivation and capacity to engage in ER (Sender et al., 2017; Hoge et al., 2015). Employees may deliberately avert this capability in favour of lower risk, standard approaches to work.

H2: Job insecurity is negatively related to ER.

2.2.3 Unclear organisational goals

Unclear organisational goals are long-standing concerns in public sector organisations (Chun & Rainey, 2005). These organisations are often characterised by political uncertainty and multi-level governance, and face uncertainty and ambiguity around strategic goals, legitimacy, and

organisational capability (Christensen et al., 2016). We propose that unclear organisational-level goals potentially have distinct processes, compared to role ambiguity. As hard-to-control hindrance stressors, they limit employees' capacity to align around collective and mutually shared understandings, purpose, and aims; to share knowledge; and to engage in the necessary collective sense making needed for the effective adaptation and creative problem solving that characterises ER (Maitlis & Christianson, 2014; Mousa et al., 2020; Näswall et al., 2019; Wright & Pandey, 2011). Unclear organisational goals carry risks of more red tape and centralisation, and so circumscribe opportunity for ER (Chun & Rainey, 2006). They also carry risks of less job satisfaction and reward expectation and so circumscribe motivation for ER. It may thus limit both opportunities and motivation for the network-leveraging, learning, and adaptive behaviours consistent with ER. We hypothesise that:

H3: Unclear organisational goals are negatively related with ER.

2.2.4 Inter-agency collaboration

Public sector organisations are often required to coordinate projects and resources across multiple agencies (O'Flynn, 2009), often to address environmental uncertainty and change. The extant research suggests that inter-agency collaboration is itself complex and requires significant levels of organisational trust, reciprocity, and accountability (Head & Alford, 2015). In the absence of these requirements, inter-agency collaboration can undercut the motivation to engage in ER. We highlight a collaboration paradox: although cooperative work environments foster resilient behaviours such as collaboration and support among peers (Kuntz et al., 2017), collaboration between agencies often requires that employees work through conflicting and uncertain organisational agendas and value systems. Although public sector workers identify the many benefits inherent in inter-agency collaboration (Wegrich, 2019), for organisations these collaborations present a double-edged sword, which potentially poses challenges for ER.

Inter-agency collaboration introduces complexity to work processes (Parker et al., 2023). It creates costs arising from power dynamics, time-intensive exchanges, resource management, conflict management, and suboptimal outcomes (Mitchell et al., 2015). Potential negative experiences with past and ongoing partnering organisations arising from trust and accountability issues also loom (Ansell & Gash, 2008). Inter-agency collaboration can be rigid (Lindsay & McQuaid, 2008) and thus limit employee agency and control, dissuading them from seizing opportunities to extend their networks and work collaboratively (Bryson et al., 2015). In essence, the low control and high-risk nature of inter-agency collaboration in the public sector might discourage the learning, adaptive, and network-leveraging behaviours that signal ER. We therefore present the following hypothesis:

H4: Inter-agency collaboration is negatively associated with ER.

2.2.5 Resource constraints

The resource constraints that characterise public sector organisations have been linked to poor customer service, decreased legitimacy, and reduced innovation and flexibility (Holzer, 2022; Hope & Fraser, 2003). Resource constraints are both correlates and impediments to effective

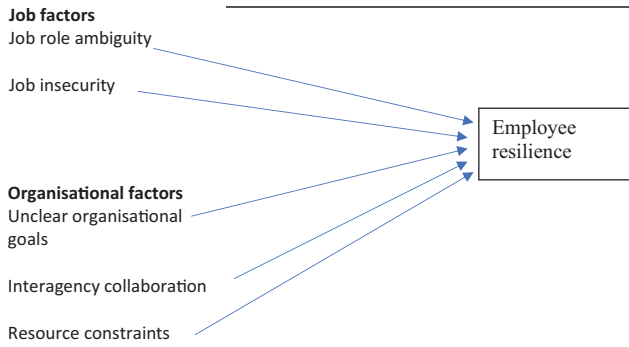


FIGURE 1 Study relationships.
[Colour figure can be viewed at
wileyonlinelibrary.com]

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responses to changing and complex public sector environments (van der Wal, 2020). Resource constraints spanning staff shortages, limited equipment, and reductions associated with budget cuts put pressure on employees to ‘do more with less’ (Hupe & Buffat, 2014). In some cases, this can prompt employees to find structure and certainty (e.g. clear budget restrictions) (Marginson & Ogden, 2005), and to devise new and more efficient ways of working (Masood & Nisar, 2022). In most instances, however, resource constraints increase workloads and hinder staffing adequacy and teamwork, resulting in stress and turnover (Farr-Wharton et al., 2021). Its effects are hard to control, and it increases cognitive and affective demands. Employees may therefore narrow their attention to the fulfilment of essential job requirements and the preservation of existing scarce resources (Mänttari-Van der Kuip, 2015). As a result, employees may limit their engagement with the proactive adaptation that characterises ER. We posit that resource constraints in public sector organisations hinder ER:

H5: Resource constraints are negatively associated with ER.

“See Figure 1 for hypothesised study relationships”.

3 | METHOD

3.1 | Data collection

Data were collected in the New Zealand public service. This is an appropriate study setting for this topic, as financial and human resources are often constrained (Plimmer et al., 2017), employment conditions are modelled on those in the private sector, and employees are frequently called on to adapt to new challenges, crises, destabilising reforms, and ‘hyper-innovation’ (Yui & Gregory, 2018). An anonymous survey was distributed by email among all members of New Zealand’s main public sector union, the Public Service Association. A total of 14,125 usable responses were received (25% response rate). For this study, community and voluntary sector participants are excluded and only participants who worked in central departments and agencies, and regional authorities are included ($n = 11,533$). Table 1 shows that the majority of participants are women (71.5%) and of European origin (68.9%). The median age of participants is 50 years (mean = 48.9 years), 46.9% have a university degree, and 15% have supervisor or management responsibilities.

TABLE 1 Sample characteristics

Variables	Percentage
Gender	
Female	71.5
Male	28.5
Age	
18–24	1.5
25–34	13.1
35–44	19.3
45–54	29.8
55–64	29.4
65+	7.0
Ethnicity	
NZ European	68.9
Non-NZ European	31.1
Highest level of education achieved	
No qualifications	3.4
Secondary/high school	19.4
Post-secondary	28.1
University degree	24.6
Post-graduate	24.5
Highest level of education achieved	
No qualifications	3.4
Secondary/high school	19.4
Post-secondary	28.1
University degree	24.6
Post-graduate	24.5
Position	
Non-managerial	87.0
Team leader/Middle level managers	12.1
Senior-level managers	.8
Executive/Corporate managers	.1
Salary grade (NZD)	
\$20,000 or less	.9
\$20,001–\$30,000	2.9
\$30,001–\$40,000	7.3
\$40,001–\$50,000	19.1
\$50,001–\$60,000	22.3
\$60,001–\$70,000	18.7
\$70,001–\$80,000	12.6
\$80,001–\$90,000	7.0
\$90,001–\$100,000	4.7

(Continues)

TABLE 1 (Continued)

Variables	Percentage
\$100,001–\$150,000	4.2
\$150,001 or more	.2
Length of current employment	
10 years or less	60.9
11 years or more	39.1
Workplace size	
99 employees or less	56.7
100 employees or more	43.3

3.2 | Measures

The outcome variable, ER, was measured with a nine-item scale from Näswall et al. (2019), with the following items: ‘I effectively collaborate with others to handle unexpected challenges at work’, ‘I successfully manage a high and intense workload for long periods of time’, ‘I resolve crises competently at work’, ‘I effectively respond to changing conditions at work’, ‘I approach managers when I need their support’, ‘I learn from mistakes at work and improve the way I do my job’, ‘I use change at work as an opportunity for growth’, ‘I seek assistance and resources when I need them at work’, and ‘I adapt to change and come out stronger’. The latter, attitudinal item was added from the Plimmer et al. (2022) study. A 7-point Likert scale ranging from *never* to *always* is used for the measure of ER, with higher values indicating higher levels of resilience. Previous exploratory factor analysis (EFA) analysis of this variable has identified it as a single factor (Näswall et al., 2019; Plimmer et al., 2022). Confirmatory factor analysis (CFA) shows appropriate fit ($\chi^2 = 1951.113$, $df = 22$, $p < .01$, comparative fit index (CFI) = .950, Goodness of fit (GFI) = .964, Normed fit index (NFI) = .950, Tucker Lewis Index (TLI) = .919, Root mean square error of approximation (RMSEA) = .084, Standardised root mean square residual (SRMR) = .047) for the one-factor solution in the current data, as per previous studies.

A 7-point Likert scale ranging from *strongly disagree* to *strongly agree* is used for the rest of the measures, with higher values indicating greater agreement with the construct. Role ambiguity was measured by three items from the Rizzo et al. (1970) role clarity scale (e.g. ‘I know exactly what is expected of me’), which were reversed to indicate ambiguity. Job insecurity was measured using a single item: ‘I might lose my job in the next 6 months’. This single item is increasingly also used in health policy research, and studies find it having good predictive properties (Timming, 2010).

For the organisational-level variables, we first averaged all the relevant responses in that organisation, and then correlated individuals’ ER score with this (grand mean) average of all participants in the organisation. Resource constraints were calculated only using manager responses (see below for technical details). This multi-level analysis meant organisational phenomena (Level 2) were measured at the level they occurred, separate from a participant’s unique perception of the organisation. These organisational phenomena (at Level 2) could then be correlated against individuals reported ER (at Level 1).

At the organisational level, inter-agency collaboration was measured with a summative single item: ‘Our organisation collaborates with other agencies to accomplish work objectives’. Unclear organisational goals were measured using three items from Rainey’s (1983) goal clarity measure and a further one concerning the clarity and explicability of the organisations mission, vision, and

goals. All items were reversed before analyses to indicate unclear organisational goals. An example item is 'This organisation has clearly defined goals' (reversed). The fourth item was added to capture the visionary aspect of organisational goals and their instrumental use: 'Senior managers have a clear strategic vision for their organisations' (reversed). Organisational resource constraint was measured with the item: 'Our budget seems always very tight'. Only management-level employees ($n = 1481$) responded to the resource constraints item. Since there was still some variation within organisation, and the non-managers have no information on this variable, the resource constraints data were aggregated by averaging the manager responses from an organisation and using them for all the employees within that organisation. Summative (or unidimensional) measures are increasingly common in organisational research (e.g. Cantarelli et al., 2016; Reisel & Banai, 2002).

3.2.1 Control variables

Gender, length in job (tenure), and managerial status were included as control variables, because of their known relationships to job experiences (Carey & Dickinson, 2015) and significance in preliminary analysis. Public service motivation (PSM) was also included because it links to positive job attitudes and behaviours, including prosocial behaviour, performance, and ER (Plimmer et al., 2022; Vandenabeele et al., 2014).

3.3 | Multi-level analysis

As multiple regression analysis does not account for variation attributable to the organisation respondents belong to, multi-level modelling techniques (in MPlus 8.3) were used to take between-organisation variation into account. Multi-level modelling also allowed for the proper incorporation of variables that were more appropriate to analyse at the between-organisation level. It allowed substantive multi-level theory to be directly incorporated into the model (McNeish et al., 2017). Gender, length in job (tenure), managerial status, and PSM as control variables, along with role ambiguity and job insecurity, were modelled at Level 1 (within organisation). Unclear organisational goals, interagency collaboration, and resource constraints were modelled as between-organisational factors at Level 2. Level 1 variables were centred on the group mean to avoid conflating Level 1 and Level 2 variability. Level 2 variables were grand-mean centred to facilitate interpretation.

The between-organisation variables were aggregated at Level 2 for several reasons, including it being used increasingly in current practice (Audenaert et al., 2019; Farr-Wharton et al., 2021; Gomes et al., 2022; Hartner-Tiefenthaler et al., 2022; Jong & Ford, 2016). Primarily, aggregation allows for exploration of how demands are experienced as collective phenomenon. The separation between individual and collective experiences of the organisation provides unique perspectives on the phenomena investigated. Furthermore, Level 2 aggregation better aligns with the referent in our measures (the organisation), and the organisational-level constructs theorised. While Level 2 analysis is conducted at the expense of statistical power, it allows for the examination of how the variation in the phenomena between organisations relates to ER (McNeish et al., 2017). For example, it allows testing the assumption that employees in an organisation with more unclear goals compared to other organisations will report lower ER than employees in an organisation with clearer goals.

Only organisations with more than 30 responses were included in the multi-level analysis. This inclusion criterion is based on evidence from previous studies (see LeBreton & Senter [2008] for an overview), suggesting that while stable estimates of inter-rater agreement and reliability at Level 2 require sample sizes of 10 raters or more at Level 1, larger samples are desirable to ensure adequate power at Level 1. In the current study, it was determined that using a cut-off of 30 or more participants per organisation results in an adequate Level 2 sample size. Application of this criteria resulted in 65 clusters (organisations) with an average of 178 participants per organisation.

To determine the level of agreement within the organisations and the degree to which the outcome of ER varied between organisations, two measures of inter-rater agreement (r_{wg} and AD) and the combination of inter-rater agreement and reliability ($ICC_{(1)}$) were calculated. The intra-class correlation coefficient ($ICC_{(1)}$) for ER is .03, indicating that some variation in ER can be attributed to organisational membership. While small, it suggests that organisational membership influences ratings of ER (LeBreton & Senter, 2008), suggesting a multi-level approach to analysis.

Second, the r_{wg} scores for the different variables ranged between .45 and .89, with an average of .65. The latter is within the range of values suggested to represent 'moderate agreement' by LeBreton and Senter (2008, p. 836) (scores between .51 and .70; Lance et al., 2006). The three variables modelled on the organisational level (Unclear Organisational Goals, Collaboration, and Resource Constraints) all have r_{wg} values indicating moderate agreement (.54–.57).

The second metric for describing agreement within organisations is the Average Deviation (AD_M) score, which measures the average deviation from the mean score in a group. Scores below 1.2 on 7-point scales (as in the present study) indicate relative agreement within a group (Burke & Dunlap, 2002). The AD_M scores of the three organisational-level variables are all around 1.

Common method variance (CMV) was assessed, despite studies increasingly suggesting that CMV threats may be exaggerated (George & Pandey, 2017; Lance et al., 2010). CMV is also less of a threat when using data collected from different levels of organisational hierarchies (George & Pandey, 2017), and is further reduced by using anonymity, empirically tested, and validated scales to prevent item ambiguity, and physical separation of predictor and ER items (Podsakoff et al., 2003), as this study does. Following current practice, we tested for CMV using a common latent factor, indicating that the variance due to the common method is 6.1%, and no cause for concern. Furthermore, as the research purpose was not known or obvious to the participants, and the survey was anonymous, the risk of social desirability bias is reduced (Podsakoff et al., 2003). Constructs of a perceptual nature are most appropriately captured through self-reports (Chan, 2009), making self-report measures the most appropriate way of collecting data on the phenomena in the present study.

4 | RESULTS

Table 2 depicts the descriptive statistics, correlations, and reliability coefficients from our study. Participants commonly rated themselves as resilient ($M = 5.74$; $SD = .66$), generally agreeing with the items in our ER measure. Our most resilient respondents were typically a female who was motivated to serve the public, in a secure management position with a clearly defined role, that she had been in less than 10 years. In general, our participants rated their jobs as secure, with low role ambiguity. Participants generally rate their employing organisation as moderate in goal clarity and inter-agency collaboration but experiencing resource constraints. Regarding bivariate correlations, all work demands' predictors are negatively and significantly related to ER. Scale reliabilities were satisfactory, with Cronbach's alpha ranging between .78 and .90.

TABLE 2 Means, standard deviations, and correlations at Level 1

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1 Gender (0 = female, 1 = male)	.28	.449										
2 Tenure (0 = less than 10 years, 1 = 11 years or more)	.39	.488	.08**									
3 Manager (0 = non-manager, 1 = manager)	.12	.33	.08**	.13**	1							
4 Public service motivation	5.29	.90	-.02	-.01	.02**	.78						
5 Job insecurity	2.96	1.27	.04**	-.07**	-.01	-.06**						
6 Role ambiguity	2.16	1.09	.06**	.07**	.00	-.01	.26**	.83				
7 Unclear organisational goals	3.20	1.38	.07**	.01	-.02*	-.09**	.48**	.20**	.90			
8 Inter-agency collaboration	4.78	1.35	.01	.01	.05**	.08**	-.33**	-.16**	-.50**			
9 Resource constraints	5.61	.57	-.11**	.01	.02*	.07**	.01	-.01	.07**	-.04**		
10 Employee resilience	5.74	.66	-.13**	-.03**	.07**	.37**	-.26**	-.14**	-.20**	.16**	.07**	.84

Note: Listwise *N* = 11,180; Cronbach's alpha in the diagonal where relevant. For 4–10, higher values indicate higher levels of construct.

***p* < .01;

**p* < .05.

TABLE 3 Multi-level analysis results: Unstandardised coefficients

	Estimate	SE	Est/SE	p-value
Within level				
Controls				
Gender (0 = female, 1 = male)	-.15	.013	-11.54	.00
Tenure (0 = less than 10 years, 1 = 11 years or more)	-.5	.012	-41.67	.00
Manager (0 = non-manager, 1 = manager)	.14	.017	8.24	.00
Public service motivation	.25	.005	50.00	.00
Job factors				
Role ambiguity	-.11	.004	-27.50	.00
Job insecurity	-.04	.005	-8.00	.00
Residual variances				
Employee resilience	.34	.005	68.00	.00
R-squared	.20	.001	21.00	.00
Between level				
Unclear organisational goals	-.19	.04	-4.75	.00
Inter-agency collaboration	-.18	.047	-3.83	.00
Resource constraints	.05	.019	2.63	.01
Residual variances				
Employee resilience	.007	.001	3.00	.00
R-squared	.47	.143	3.36	.001

The results of multi-level regression analysis are presented in Table 3. At Level 1, role ambiguity and job insecurity are significantly and negatively related to ER, supporting H1 and H2. The variance explained by the within-organisation factors is $R^2 = .20$. At Level 2, unclear organisational goals (H3) and interagency collaboration (H4) are negatively and significantly related to ER. However, contrary to the effect hypothesised (H5), resource constraints are significantly and positively related to ER. The variance explained by the organisational-level (Level 2) variables is $R^2 = .47$.

5 | DISCUSSION

Public servants face increasingly complex and ambiguous demands caused by pandemics, climate change-induced civil emergencies, and other aspects of the environment. As Schuster et al. (2020, p. 793) say, rising job demands and diminished resources lead to 'dire' predictions 'through the lens of job demands-resources theory'. We examine key public sector work demands that may detrimentally affect ER, and that manifest at both organisational and individual levels. As expected, greater role ambiguity and job insecurity are associated with lower reported ER (H1 and H2). At the organisational level, unclear organisational goals and inter-agency collaboration are also with lower ER (H3 and H4), aligning with our expectations. However, contrary to the hypothesis, more constrained resources are associated with higher ER (H5).

This study addresses important questions about what types of adversity, as job demands, will hinder ER in public services. Controllable challenge stressors, such as stretch goals, are examples of challenges that might enhance ER. Conversely, stressors outside of employee control, such as the ones examined in our study, negatively affect ER. These findings echo a core principle of the JD-R model: positive employee outcomes require that organisations focus on both the provision of resources that sustain employee performance and well-being, and the mitigation of work demands that negatively impact employees (Bakker et al., 2023). Our findings point to the need to minimise uncertainty role and organisational goal ambiguity, and to manage inter-agency collaborations so that complexity is managed. Doing so will support the enactment of valued resilient behaviours, including proactive learning, network leveraging, and continuous performance improvement and adaptation to change. ER employee behaviours likely help organisations be resilient (Lengnick-Hall & Beck, 2011). Provision of resources to foster ER no doubt helps and is well studied. This study identifies that reducing demands is also important.

In this light, it is perhaps surprising that higher levels of resource constraints at the organisational level are associated with higher ER, indicating that they can be considered a challenge, rather than a hindrance stressor. At least one study notes that resource constraints in the form of tight, narrow budgetary goals provide structure and certainty (Marginson & Ogden, 2005), which may direct processes of network leveraging, learning, and adapting. Resource scarcity also challenges employees and their organisations to modify their processes to fit with the constraints. Responses to collectively experienced budget and other resource constraints may be driven by collective values. In times of crises and resource constraint, street-level bureaucrats have been found to reconfigure state services for citizens, motivated by compassion and kindness, in ways that emulates the learning, adaptation, and use of networks that characterise ER (Masood & Nisar, 2022). The coping literature has also identified group-level differences in how street-level bureaucrats cope with limited resources, from rigid rule following to more expansive and constructive adaptive behaviours (Tummers et al., 2015). The small coefficient in this finding suggests that the benefits of resource constraint are not strong or clear cut.

Our finding that job role ambiguity and job insecurity are negatively related to ER is consistent with past research that such demands diminish cognitive and affective resources. This diminishment in turn leads to interpersonal conflict, withdrawal, and distancing, rather than the network-leveraging, adaptation, and learning behaviours that characterise ER (Davis & Stazyk, 2022; Hill et al., 2015; Hoge et al., 2015; LePine et al., 2005; Sender et al., 2017). In terms of threat rigidity theory, variable and unpredictable changes in the environment make organisations become more top-down, rigid, and non-participatory, and potentially restrict and discourage ER (Olsen & Sexton, 2009; Staw et al., 1981; Wynen et al., 2019). To ensure employees adopt adaptive behaviours in the face of change, these findings point to the importance of ensuring job security and role and goal clarity. Our study shows that unclear organisational goals are negatively associated with ER. Goal ambiguity is well-researched, especially with managers at individual levels (e.g. Chun & Rainey, 2005; Davis & Stazyk, 2022), but its relationship to ER had yet to be empirically tested.

In sum, our findings are consistent with the idea that variable, uncertain, complex, and ambiguous work demands represent hindrance stressors that undermine ER. Under stress and anxiety, employees fall back on established work patterns rather than the more expansive behaviours that denote ER (Wynen et al., 2017). There is a risk that such established work patterns include defensive coping, which leaves public organisations poorly equipped to deal with challenges that require employee growth and development, such as large-scale change implementation and adaptive response to major crises and disasters. Importantly, developing employees to deal with such

challenges requires an organisational capacity to learn (Malik & Garg, 2020), leadership support, and other organisational resources to arrest defensive or risk averse behaviours from emerging (Borst et al., 2017).

Although some past research posits inter-agency collaboration as increasing resources such as staff, budget, authority, and know-how (Innes & Booher, 2010), our results show that, at the organisational level, inter-agency collaboration is negatively associated with ER. We note the difference between our supplementary individual-level results, which report a *positive* relationship between inter-agency collaboration and ER (Appendix A), and our organisational Level 2 analysis (Table 3), which reports a *negative* relationship to ER. At Level 1, employees may have viewed inter-agency collaboration as an opportunity to engage in ER behaviours such as network leveraging and provide opportunities to adapt and learn. However, inter-agency collaboration as a group-level phenomenon may hinder the discretion and innovation likely to support ER, especially for those not engaging in inter-agency collaboration themselves (Plimmer et al., 2022). It may add to complexity, for instance, but without the means to try and resolve it. In our multi-level analysis, coefficients were highest for the Level 2 variables of unclear organisational goals and interagency collaboration, highlighting the importance of these contextual organisational experiences on ER.

5.1 | Limitations and directions for future research

Study limitations include the use of self-assessed, single-source data. While this risks common-method variance inflating relationships, our multi-level design addresses this, and the common-method factor test found little evidence of it. The cross-sectional design of the study limits causal inferences, but attrition and other problems means longitudinal studies also do not guarantee establishing causal direction (Stritch, 2017). For large-sample exploratory research, a cross-sectional design provides a good starting point for future studies.

While these study findings are important, further progress must eventually come from studies in other settings that triangulate and extend the findings from our large sample presented here. Future studies could also examine the effect of other hindrance stressors on ER, perhaps using objective data, such as frequent restructurings, budget data, and collaborations. Interactions with resources could be examined. The modest size of our coefficients points to the role of other factors not included in this study, such as within-person factors, and the content of the job. The fact that inter-agency collaboration is positively related to ER at Level 1 (Appendix A) and negatively at Level 2 (Table 3) highlights the importance of multi-level studies that analyse organisational-level constructs at that level. Some data were lost because of our conservative threshold of requiring 30 participants in each organisation.

Based on these findings, we propose that managers can directly address uncertainty, complexity, and ambiguity by clarifying job and organisational goals, or facilitate alternative resources such as job control and supervisor support (Dawson et al., 2016), which buffer the strain of job demands that are hindrance stressors (Dawson et al., 2016). Constructive leadership and environments for innovation might also help (Plimmer et al., 2022). A stronger focus on contextual and interpersonal competencies may help address the challenges of collaboration (Zeier et al., 2021). These potentially change both how stressors are experienced (as hindrance or challenge stressors) and provide resources to deal with them (Hobfoll et al., 2018). To some extent, whether a stressor is classified as a hindrance or challenge goal can depend on the individual's cognitive appraisal and coping styles (Taris, 2006), but our findings identify that certain job and organisational

factors are commonly experienced as harmful to ER. Assuring job security would also help. To better deal with turbulence, revised reform models could better build up ER through reforms centred on employee capability, rather than organisational structure (Yui & Gregory, 2018).

6 | CONCLUSIONS

This study complements existing studies of resources that contribute to ER (Cooke et al., 2019; Malik & Garg, 2020) by analysing the effect of public sector job and organisational demands on ER. It conceptualises ER as behaviours through which employees remain adaptive and effective and finds that uncertain, complex, and ambiguous work conditions hinder ER. Paradoxically, while ER is assumed to help employees working under challenging conditions, variable, uncertain, complex, and ambiguous conditions also deplete ER.

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APPENDIX A: SINGLE-LEVEL REGRESSION: UNSTANDARDISED COEFFICIENTS

	Estimate	SE	p-value
Within level			
Controls			
Gender	-.157	.013	.000
Tenure	-.035	.012	.002
Manager	-.129	.017	.009
Public service motivation (PSM)	.252	.006	.000
Main effects			
Role ambiguity (RA)	-.094	.005	.000
Job insecurity (JIS)	-.040	.005	.000
Unclear organisational goals (UOG)	-.021	.005	.000
Inter-agency collaboration (IAC)	.020	.005	.000
Resource constraints (RC)	.048	.010	.000
R-squared main effects	.219	.586	.000