

# Confidence Matters: Self-efficacy Moderates the Credit that Supervisors Give to Adaptive and Proactive Role Behaviours

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**In complex and uncertain work environments, employees need to not only be proficient in carrying out their core duties, but also to be adaptive (able to cope and respond to unpredictable events) and proactive (able to anticipate the situation and act in a self-directed way) in their work roles. In this study we investigate the extent to which supervisors actually give credit to adaptive and proactive role behaviours when they judge employees' overall job performance. Drawing on attribution theory, we propose that the extent to which these role behaviours are valued by supervisors will be enhanced by employees' confidence for relevant role behaviours. Support for these ideas is provided using data from junior doctors and their supervisors in a hospital emergency department. Adaptive role behaviours positively influenced supervisors' judgements of overall job performance. This relationship was stronger for employees with high self-efficacy for achieving outcomes. Engaging in proactive role behaviours while also lacking role-breadth self-efficacy resulted in supervisors' giving employees less credit for their proactive role behaviours. Findings support the argument that employees' self-efficacy for specific role behaviours provides attributional cues about capability that modify how adaptive and proactive role behaviours are interpreted and valued.**

## Introduction

Job performance, typically assessed by supervisors, is one of the most used criterion measures in organizational research (Murphy and Cleveland, 1991). Practically, job performance as judged by supervisors, informs important decisions such as: Who is the right person for the job? Who should be promoted? Who deserves a raise? Who needs further training and development? The importance of getting the 'right' answers to these questions means that we need to understand what types of

behaviours are valued by supervisors when making judgments about performance.

Although there is an extensive literature on the factors that affect supervisors' performance judgements, much of the focus to date is on how and when supervisors are influenced by employees' performance on 'core' task (i.e. behaviours that meet formalized job requirements) (Landy and Farr, 1980). Given that it is widely accepted that organizational effectiveness requires employees to do more than carry out core and prescribed tasks, there is also a need to understand the extent to which supervisors actually give credit to behaviours beyond the fulfilment of core task requirements (Borman and Motowidlo, 1993; Crant, 2000; Frese and Fay, 2001). Specifically, many scholars have argued that, in order for

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organizations to be agile when the environment is characterized by uncertainty, organizations also need employees to be adaptable and responsive (adaptive role behaviours), and to be proactive and take initiative in situations that might not have been anticipated (proactive role behaviours). But are such behaviours, often referred to as emergent role behaviours in contrast to fixed task behaviours (Ilgen and Hollenbeck, 1991), actually valued by supervisors in organizations? And if so, under what conditions? These are the core questions we address in the current paper. The issue is important because, by having a clearer understanding of what actually influences supervisors' performance judgements, including both social and behavioural factors, we can minimize the impact of non-performance-related signals that may bias performance evaluations through training to raise awareness of these factors.

We focus this study on junior doctors working in the emergency department of a hospital. The question as to whether emergent role behaviours are valued by supervisors is an especially pertinent one in this context. Unlike other types of emergent extra-role behaviours such as organizational citizenship behaviour (OCB; Smith, Organ and Near, 1983), adaptive and proactive role behaviours are pertinent and specific responses to complex and dynamic work environments such as hospitals and, in particular, hospital emergency departments. Ilgen and Hollenbeck (1991) discussed how adaptive and proactive role behaviours are especially necessary in high-scope jobs such as those held by professionals because the 'established task elements' barely cover what is needed for effectiveness. Similarly, in their model of work performance, Griffin, Neal and Parker (2007) argued that it is in highly uncertain and unpredictable situations that adaptive and proactive role behaviours are especially required.

Uncertainty means that inputs, processes and/or outputs lack predictability (Wall, Cordery and Clegg, 2002), such as complex evolving customer or patient demands. Adaptive role behaviour is important, because individuals need to be able to cope with and respond to unpredictable events, such as the doctor who is able to adaptively readjust work priorities and shift focus in order to deal with the changing needs and status of patients. Proactive role behaviour is important, because uncertainty means that it is not possible to specify task requirements in advance. Individuals need to

be able to anticipate the situation and act in a self-directed way to be effective, such as an emergency doctor who proactively scans the patient flow and acts on anticipated problems before they become insurmountable.

Yet, despite the theorized importance of adaptive and proactive role behaviours in uncertain environments, we do not know the extent to which supervisors in these settings actually value such behaviours (Borman and Motowidlo, 1993; Crant, 2000; Frese and Fay, 2001; Murphy and Jackson, 1999; Parker, Williams and Turner, 2006; Pulakos *et al.*, 2000). For example, it has been argued that, depending on a variety of factors, supervisors can see employee proactive role behaviours as unnecessarily 'shaking the boat', a threat (Frese and Fay, 2001) or as an ingratiation attempt (Bolino, 1999). In the one study that has addressed this issue, Grant, Parker and Collins (2009) showed that supervisors appreciate and give more credit to proactive role behaviours when they are enacted by employees with low trait negative affect and high prosocial values. This study demonstrates that proactive role behaviours are not always judged positively. Moreover, Grant, Parker and Collins (2009) did not consider how supervisors might judge adaptive role behaviour. For example, it is possible that adaptive role behaviours are less visible to supervisors, and therefore do not count in supervisory judgements of performance. A crucial contribution of this study is that we examine the extent – in a context in which theory suggests these behaviours are essential – to which adaptive and proactive role behaviours of professionals are valued by their supervisors.

Importantly, our focus is not on whether managers say that they value these behaviours (or their espoused values/beliefs), but whether they actually value these behaviours, as shown by giving them credit when they judge employees' overall job performance. In other words, our focus is on the extent to which various role behaviours predict supervisor ratings of employees' overall job performance. Because of the rather implicit and unconscious nature of performance evaluation processes, we expect that supervisors' ratings will be affected by not only the extent to which individuals engage in adaptive and proactive role behaviours, but also how these behaviours are enacted. Because both behaviours are emergent rather than prescribed, and are often challenging to execute, we propose that supervisors' appreciation of these

behaviours will be greater when employees execute them confidently. Thus, we theorize that employees' self-efficacy, which is the general belief about one's 'capabilities to mobilize the motivation, cognitive resources, and courses of actions to meet given situational demands' (Wood and Bandura, 1989, p. 408) will moderate the relationship between employees' engagement in adaptive and proactive role behaviours and supervisors' ratings of overall job performance. As we elaborate later, we focus specifically on the moderating role of two types of self-efficacy that we propose are specifically relevant to adaptive and proactive role behaviours, respectively, that is, outcome self-efficacy and role-breadth self-efficacy. Next, we describe the hypothesized relationships in greater depth.

### **Main effects of adaptive and proactive role behaviours on supervisors' judgement of overall job performance**

An overarching framework that is theoretically important for differentiating and integrating work role behaviours that emerge in uncertain contexts is Griffin, Neal and Parker's (2007) model of proficient, adaptive and proactive role behaviours. Proficient role behaviour is closely related to the concept of core task behaviour (Borman and Motowildo, 1993) and refers to behaviours that meet formalized job requirements. However, when there are high levels of uncertainty and unpredictability, it is not possible to specify all requirements; rather, work roles emerge through adaptive and proactive behaviour by role incumbents (Ilgen and Hollenbeck, 1991; Murphy and Jackson, 1999). Adaptive role behaviours involve responding to uncertainty and changing conditions as they happen, whereas proactive role behaviours are future-oriented and involve individuals anticipating future uncertainties and acting in a self-directed way to be effective. Proactive role behaviour is often regarded as a riskier form of role behaviour for individuals enacting it, as it sometimes involves deviating from norms and supervisor expectations (Frese and Fay, 2001; Grant and Ashford, 2008; Grant, Parker and Collins, 2009).

There is evidence that adaptive and proactive role behaviours are multidimensional constructs encompassing different dimensions (Belschak and Den Hartog, 2010; Grant and Ashford, 2008;

Parker and Collins, 2010; Pulakos *et al.*, 2000, 2002). In this study, we focus on dimensions of adaptive and proactive role behaviours that are central to these constructs. Specifically, for adaptive role behaviours, we focus on responding to uncertainty in the environment by readjusting priorities and shifting focus when necessary (Pulakos *et al.*, 2000). For proactive role behaviours, we focus on scanning the environment and anticipating future uncertainties and acting in a self-directed way to be effective (Crant, 2000; Frese and Fay, 2001; Grant, Parker and Collins, 2009; Parker and Collins, 2010).

Although adaptive and proactive role behaviours are conceptually distinct from each other (Griffin, Neal and Parker, 2007), their relative contribution to supervisor ratings of performance is not yet known. To date, research on adaptive and proactive role behaviours has largely advanced separately (for illustrative reviews, see Johnson, 2003; Parker and Collins, 2010; Pulakos *et al.*, 2000). In fact, only three studies exist that jointly investigate adaptive and proactive role behaviours. However, the focus of these three studies was on the antecedents of these role behaviours (Griffin, Neal and Parker, 2007; Griffin, Parker and Mason, 2010; Strauss, Griffin and Rafferty, 2009) rather than how they affect the way in which supervisors judge and rate employees' overall job performance. Such an analysis is important because it will show whether these behaviours are both uniquely valued by supervisors. We also test whether these effects emerge over and above proficiency in task behaviours, which is already known to be important for supervisors' performance ratings (Borman, White and Dorsey, 1995; Borman *et al.*, 1991).

Specifically, as shown in Figure 1, we predict that supervisors will value and appreciate the adaptive role behaviours of employees and perceive these behaviours as positively contributing to overall job performance. This is because adaptive role behaviour has obvious utility, especially when the work environment is characterized by high uncertainty and unpredictability, such as in a hospital emergency department, the context considered in this paper. Employees who engage in adaptive role behaviours are able to reorder their work priorities and shift focus to deal with situations in real time (Neal *et al.*, 2011; Pulakos *et al.*, 2000). These behaviours are needed to cope effectively in uncertain work environments, so we

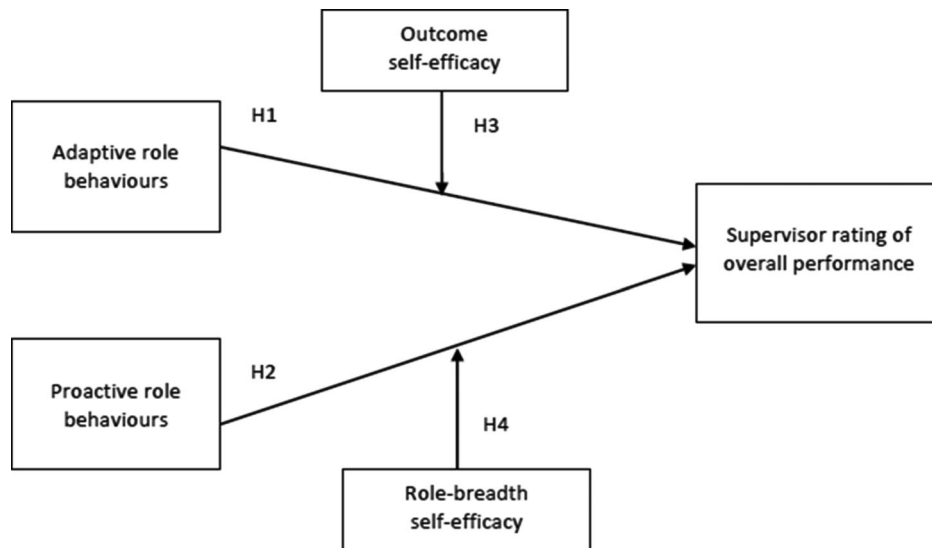


Figure 1. Theoretical model

expect supervisors to value these behaviours when making judgements about employees' overall job performance.

Conversely, supervisors are likely to judge an employee who does not adapt to the dynamics of their work context negatively; for example, a doctor who fails to shift focus from one patient to another more critical patient when test results become available. Thus, over and above being proficient in performing core tasks and proactive role behaviours, we expect that employees who frequently engage in adaptive role behaviours will receive higher overall job performance ratings from supervisors. This is consistent with evidence showing positive associations between adaptive role behaviour and performance judgements from other sources. For example, Bitner, Booms and Mohr (1994) showed that employees who adapt to meet customer needs received better customer-service evaluations. There is also some evidence that adaptive role behaviours relate positively to objective performance outcomes such as higher sales (Spiro and Weitz, 1990). We thus hypothesize the following:

*H1:* Individuals' adaptive role behaviours at work are positively associated with supervisors' ratings of overall job performance.

In terms of proactive role behaviours, there have been arguments that supervisors can judge proac-

tive role behaviours negatively: for example, seeing them as a potential distraction for the trainee or considering them of less value because they come from an inexperienced source (Frese and Fay, 2001). However, we propose that supervisors will value and appreciate these behaviours in the current context because it is highly uncertain and unpredictable. Employees who engage in proactive role behaviours can seize opportunities and make things happen (Frese and Fay, 2001; Grant and Ashford, 2008; Parker and Collins, 2010). Crucially, being proactive by thinking ahead enables issues to be resolved before problems arise, that is, to be prevented, which is especially important behaviour in an unpredictable environment. This means that supervisors are likely to value proactive role behaviours, as they are unlikely to be perceived as misguided or an unnecessary use of resources that might be better allocated to performing core tasks.

In sum, we expect proactive role behaviours to be valued by supervisors and thus rewarded in their ratings of overall job performance. Conversely, supervisors are likely to evaluate employees who are not engaging in proactive role behaviours in their work context negatively; for example, junior doctor who fails to 'watch out' and prioritize their work to prevent problems.

*H2:* Individuals' proactive role behaviours at work are positively associated with supervisors' ratings of overall job performance.

## Moderating effects of role-based self-efficacy

It is well-established that the performance judgement process is influenced by a range of social and cognitive-perceptual factors and biases (Arvey and Murphy, 1998). Indeed, because of the rather implicit and unconscious nature of these judgement processes, we expect that supervisors' rating of overall job performance will be affected by not only the extent to which individuals engage in adaptive and proactive role behaviours, but also how these behaviours are enacted. For instance, certain individual attributes may make their role behaviours stand out more to supervisors, thus increasing the visibility of these behaviours and enhancing the credit supervisors give to them. In this study, we propose that supervisors' appreciation of adaptive and proactive role behaviours will be greater to the extent employees execute them efficaciously.

In general, self-efficacy refers to an individual's belief that they have the capability and confidence to perform specific tasks or behaviours (Bandura, 1977). Bandura argues that self-efficacy leads to better performance, because self-efficacious individuals hold stronger beliefs in their ability to perform a task successfully, set more challenging goals, invest more resources, persist longer and are better able to deal with difficult situations. Empirical studies of self-efficacy have yielded generally consistent findings that support these propositions. For example, self-efficacy is associated with a range of important work-related outcomes, including effectiveness of task performance (Judge and Bono, 2001; Stajkovic and Luthans, 1998) and training performance (Fan and Lai, 2014; Karl, O'Leary-Kelly and Martocchio, 1993).

In this paper, we examine whether an employee's self-efficacy for specific role behaviours enhances the value of these role behaviours in supervisors' ratings of overall job performance. We draw on attribution theory and social cognitive theory to propose that the contribution of adaptive and proactive role behaviours to higher supervisor ratings of overall job performance is enhanced by the type and level of specific self-efficacy beliefs held by the employee engaging in these role behaviours. Our central argument is that performance judgements in uncertain work environments are influenced not only by the role behaviour that employees demon-

strate, but also by the extent to which employees execute them confidently.

In uncertain environments where task conditions are unclear and often unpredictable, supervisors will look to employees' expressed confidence for attribution-relevant information. Based on attribution theory, we argue that self-efficacy for specific role behaviours provides capability cues that are 'contextual signals that ... (supervisors) might reasonably interpret as indications of their overall ability' (Chatterjee and Hambrick, 2011, p. 206). Attribution theory is a theory about how individuals use information to develop causal explanations for behaviours and outcomes (Weiner, 1985). The theory has been applied in numerous contexts, but, in general, there are two conceptual approaches: the achievement motivation model emphasizes how individuals explain their own successes and failures; and the observer model emphasizes how individuals explain the behaviours and outcomes of others (Kelley, 1973; Weiner, 1985). In this study, we apply the latter model to propose that employee's domain-specific self-efficacy is likely to moderate the impact of an employee's adaptive and proactive role behaviours on supervisors' ratings of their overall job performance. According to the observer model, the supervisor makes observations to determine which causal factors are responsible for the employee behaviours and outcomes. These attributions about causality, we argue, then influence the supervisor's response to employees' behaviour, including their ratings of employees' overall job performance.

There is some evidence to support this proposition, as supervisors' perceptions of other personal characteristics that are displayed alongside employees' behaviours do affect performance ratings. For example, studies have found that raters' performance judgements are influenced by the characteristics of the employee, such as their reputation (Johnson *et al.*, 2002) as well as their affect and motives (Grant, Parker and Collins, 2009). Attributional processing – that is, these attributions and the factors that influence these attributions – are thus an important element of the performance judgement process.

An important determinant of the causal attributions developed by supervisors is whether supervisors see the behaviour or behavioural outcomes as primarily caused by a characteristic of the individual (i.e. internal attribution) or a characteristic of the situation (i.e. external attribution) (Weiner,

Heckhausen and Meyer, 1972). These ascribed attributions influence supervisor performance ratings, in that supervisors are more likely to give higher ratings when an effective behavioural outcome is attributed primarily to internal factors, such as employee's ability or effort versus external factors, such as luck or an undemanding task. Based on attribution theory, we suggest that, especially in uncertain situations, supervisors judging performance are likely to draw on salient indicators. An employees' expressed confidence for specific role behaviours – that is, their domain-specific self-efficacy – is an important source of attribution-relevant information, because it provides capability signals that supervisors are likely to use and interpret as indications of overall ability (Chatterjee and Hambrick, 2011). When employees exude confidence in their abilities, we propose that supervisors are more likely to attribute internal causal factors for employees' behaviour and behavioural outcomes. That is, supervisors will give more credit to the successful adaptive and proactive role behaviours of employees who are confident or self-efficacious in the relevant role behaviours, because they are more likely to attribute them to the employees' ability or effort, whereas when employees are less self-efficacious in the relevant role behaviours, we propose that supervisors are more likely to attribute external factors, for an employee's role behaviour and behavioural outcomes; that is give less credit to the successful adaptive and proactive behaviours of these employees, because they attribute them to luck or a less challenging situation.

Our core argument is that the effects of employees' different role behaviours on supervisors' ratings of employees' overall job performance will differ, depending on their self-efficacy for that type of emergent behaviour. Although Bandura (1977) claimed that different types of self-efficacy come into play for judging performance in any given domain, few studies to date have investigated the joint influences of more than one specific type of self-efficacy (Tierney and Farmer, 2002). In this study, we propose outcome self-efficacy to be a particularly important moderator of the link between adaptive behaviour and supervisors' ratings of employees' overall job performance, as it will function to strengthen this relationship. Outcome self-efficacy refers to individuals' beliefs about their capability to achieve outcomes deemed important in the job (Collins and Parker, 2010). For

example, outcomes in an emergency department context would include the number of patients a doctor reviews and their effectiveness in dealing with varying severity of symptoms. An employee who possesses high-outcome self-efficacy will persist for longer in the face of challenging situations and remain focused on achieving tasks effectively (Gist, 1987). Employees' confidence to complete multiple tasks with varying degrees of difficulty will provide capability cues for their supervisors. For example, when providing their supervisors with updates on patients, these employees are likely to display confidence in their diagnosis, and persist in seeking to resolve the medical problem at hand by asking further questions from the supervisor. When employees exhibit confidence in the way in which they complete tasks, their supervisors are more likely to view their adaptive role behaviour as reflecting their abilities and skills, and thereby give more credit for this behaviour when making judgements about their overall job performance.

In contrast, employees who have low-outcome self-efficacy will doubt their ability to achieve desired outcomes. Feelings of incompetence may overwhelm them, and this lack of confidence to achieve outcomes in the face of uncertain demands is likely to be observable through capability cues such as verbal and body language. In uncertain environments, events are difficult to predict in advance (e.g. new patients arrive at the emergency department who are sicker than those already admitted), and when employees attempt to adapt, individuals with lower levels of outcome self-efficacy are likely to appear more hesitant, check in with supervisors more frequently and convey less certainty of achieving successful outcomes. Even though these employees may enact adaptive role behaviours, their lack of outcome self-efficacy means that supervisors are likely to attribute these employees' behaviour to external, situational factors rather than to the skills and abilities of the individual. We thus hypothesize the following:

*H3: Outcome self-efficacy will moderate the relationship between individuals' adaptive role behaviours and supervisors' ratings of overall job performance such that the positive relationship will be stronger among individuals high in outcome self-efficacy compared with individuals low in outcome self-efficacy.*

Finally, we propose that role-breadth self-efficacy will be an important moderator of the link between proactive role behaviours and supervisors' ratings of overall job performance. Role-breadth self-efficacy refers to individuals' beliefs about their capability to extend beyond typical core duties and focus on navigating processes such as interpersonal relationships. For example, role-breadth self-efficacy means individuals have confidence in their ability to navigate complex relational systems to assist and work collectively with others in the management of work processes, as well as confidence in their communication and interaction with others, such as more senior staff (Parker, 1998). Employees high in role-breadth self-efficacy are likely to put in more effort and persist for longer to implement effective relational processes such as identifying how to coordinate information flow efficiently, discuss ideas and reduce interpersonal conflict.

We expect role-breadth self-efficacy to have an enhancing effect on a supervisor's judgement of the utility and value of proactive role behaviours. This is because the perceived value of proactive role behaviours often depends on the perception of the employee's confidence to effectively navigate the relational system in order to get the right people on side so that proactive role behaviours can result in a positive outcome (Axtell and Parker, 2003; Parker, 1998). As proactive role behaviours often deviate from norms and supervisors' expectations, these are riskier forms of behaviours, where a successful outcome is not necessarily guaranteed (Frese and Fay, 2001; Grant and Ashford, 2008). In the case of proactive role behaviours, a successful outcome is more than just completing the task; it requires getting other employees onside, and communicating why the proactive role behaviour is important. Individuals with high role-breadth self-belief have confidence in their ability to navigate the broader system and processes and do so through effective interpersonal interactions and communications with others. This confidence in navigating the relational processes is likely to act as a strong capability cue, which reinforces supervisors' positive judgements about the employees' proactive role behaviour and their overall ability to perform well. That is, we expect role-breadth self-efficacy to strengthen the positive relationship between employees' proactive role behaviours and supervisors' ratings of overall job performance such that super-

visors will see more value in employees' proactive role behaviours when role-breadth self-efficacy is also high.

In contrast, employees who have low role-breadth self-efficacy will doubt their ability to successfully handle interpersonal and relational processes that are required when going beyond typical role requirements. We propose that this lack of confidence will send negative capability cues and, in turn, these cues will influence supervisors' attributions, such as that the individual lacks abilities such as communication skills or does not make the effort to seek different and experienced opinions about how to handle difficult situations proactively. Instead, the supervisor is likely to attribute successful outcomes to luck or other factors about the situation. Indeed, other scholars have suggested that proactive behaviours performed by employees low in role-breadth self-efficacy may be perceived by supervisors, as clumsy, ill-timed or even naive (Frese and Fay, 2001; Morrison and Milliken, 2000). As Grant, Parker and Collins (2009) point out, rather than rewarding the employees' proactive efforts, supervisors may even punish the employee and judge the employees' overall job performance negatively. We thus predict role-breadth self-efficacy to be an important moderator of the relationship between proactive role behaviours and supervisors' judgement of overall job performance:

*H4: Role-breadth self-efficacy will moderate the relationship between individuals' proactive role behaviours and supervisors' ratings of overall job performance such that the positive relationship will be stronger among individuals high in role-breadth self-efficacy compared with individuals low in role-breadth self-efficacy.*

## Method

### *Research design and study context*

This research was set in a major emergency department of a public teaching hospital in Australia. The context was selected because hospital settings and, in particular, emergency departments are widely recognized as complex, uncertain environments. As described by Faraj and Xiao (2006) in their study of emergency departments, typically, 'it is impossible to predict what the workload will be like'; 'variability of input is

high (each patient is different) and analyzability is low (treatment cannot be pre-specified and must be customized); furthermore, these uncertainties are compounded, as employees 'cannot afford the luxury of focusing exclusively on one patient at a time' (Faraj and Xiao, 2006, pp. 1159–1160). The health care setting is also a particularly suitable context in which to investigate work roles, because the medical profession, like other professions (e.g. lawyers, academics, accountants), have high-scope jobs and high levels of professional autonomy, which enables professionals to enact a variety of work roles beyond their core task duties (Walter and Lopez, 2008). As discussed by Ilgen and Hollenbeck (1991), adaptive and proactive role behaviours are necessary in high-scope jobs such as those held by professionals, because core tasks barely cover what is needed for professionals to be effective, especially when they operate in work environments that are complex and uncertain.

Before the study, we shadowed junior doctors who are professionals in training and also interviewed senior doctors who supervise them in the emergency department. These observations suggested that a key challenge in this uncertain context was the subjective assessment of 'overall job performance'. As a senior doctor explained: 'Junior doctors are not given specific goals, rather a general brief. Senior doctors make up their mind (about their) performance via subjective criteria, by observing them ... In many ways, medicine is an art not a science.'

During a focus group held prior to the study, we asked senior doctors to describe junior doctors' adaptive and proactive role behaviours in the context of an emergency department. When describing adaptive role behaviours senior doctors mentioned: 'Being tolerant of interruptions', 'Being able to manage their time and constantly reprioritise', 'Knowing what's important and what isn't'.

When describing proactive role behaviours in junior doctors, senior doctors mentioned, 'showing initiative', 'being assertive and putting themselves forward', 'having the bigger picture and linking information from different sources such as where the blocks are in the system', 'asking senior doctors if they can do anything for them'.

There was also a discussion about the importance of junior doctors' confidence, as they are relative novices navigating a complex, interdepen-

dent and uncertain environment. Senior doctors discussed the challenges facing junior doctors and the way in which they observed confidence in junior doctors:

It is still very intimidating as a new doctor, when you don't know what you are doing and people are expecting you to know about things when you can't really do them or you don't feel confident about doing them.

[junior doctors] need a solid knowledge base; this provides them with confidence to act out their role in ED appropriately ... This is evident in the logic or the rationale used behind the presentation of information to the Senior Doctor.

Given the centrality of these issues, we were interested in the extent to which role behaviours, as reported by the junior doctors, in combination with their outcome and role-breadth self-efficacy, predicted supervising doctors' ratings of their overall job performance.

#### *Participants and procedure*

Sixty-one junior doctors<sup>1</sup> working in the emergency department participated in this research. This sample represented a response rate of 80%. Of the sample, 57% of the participants were female, and 48% had completed their university education overseas. On average, these junior doctors had worked in three other hospitals (mean = 3.08) and had five years' postgraduate experience (mean = 5.49) as a doctor. The profile of the participants in this sample was typical of junior doctors training within the emergency department. Paper and pencil surveys were distributed to junior doctors, and these were either collected directly from participants or mailed to the researchers via a reply-paid envelope. Participation was voluntary, and written consent was obtained. Ratings of junior doctors' overall job performance were collected from their supervisors five weeks after they completed their survey.

<sup>1</sup>Junior doctors are 'Postgraduate Trainees' (also known as Residents, Interns, Foundation Doctors, Fellows) in their first 4–6-year internship and 'Registrars' who have commenced specialized training. Both are under the supervision of a senior doctor known as a 'Consultant' or 'Specialist' (also known in the US as an Attending Physician).



### Measures

Junior doctors' role behaviours were measured based on Griffin, Neal and Parker (2007), with items adapted for the context. The question stem asked the extent to which junior doctors' engaged in the work role behaviours. The scale ranged from 1 (very infrequently/never) to 5 (very frequently/all the time). Descriptives and reliability estimates for all variables are reported in the results section.

Adaptive role behaviour was measured with three items about reacting to uncertainty and readjusting priorities. Example items include: 'when one patient requires my extended attention, I keep in mind other patients' and 'when test results come in, I readjust the priority of patients I am overseeing'. Cronbach's alpha was 0.66.

Proactive role behaviour was measured with four items about scanning the work environment and anticipating future changes in workflow. Example items include: 'When I manage my own patient load, I "watch out" to assist staff with "sicker" patients', and 'I make sure I am highly aware of patient flow in and out of the ED'. Cronbach's alpha was 0.81.

The self-efficacy measures were context specific as advocated by theory (Bandura, 1977) and scale development guidelines (Bandura, 2005), thus reflected typical measures (Collins and Parker, 2010; Parker, 1998). The overarching instruction for the self-efficacy measures was 'These questions concern your confidence in carrying out various activities', and the scale anchors were 1 (slightly confident) to 5 (very confident).

Outcome self-efficacy focused on junior doctors' confidence in achieving outcomes, that is, managing different numbers of patients at specific triage categories. The categories range from resuscitation (triage category 1, the most severe) to patients whose medical needs are not urgent (triage category 5). Items were written through discussions with emergency consultants in order to identify outcomes that would be considered appropriate for junior doctors to obtain. Managing multiple patients from triage categories 2–5 was identified as the appropriate outcome level. The stem of the items was 'How confident are you that you could simultaneously manage and progress the care of the following?' Example items include: '5 or more patients at triage category 4–5', '3 or 4 patients at triage category 2–3?'; and '5 or more patients at triage category 2–3'. Cronbach's alpha was 0.80.

Role-breadth self-efficacy reflects junior doctors' confidence in their capability to operate within the broader relational system of the emergency team and navigate the hospital processes (Collins and Parker, 2010; Parker, 1998). Items were written through discussions with emergency consultants in order to identify relational processes appropriate to the context. The stem of the items was 'How confident would you feel carrying out the following'. Example items include: 'Assisting with the management of a "well run" morning/evening shift', 'Assisting with the management of a "messy" morning/evening shift', and 'Representing issues of your professional group in meetings with consultants'. Cronbach's alpha was 0.83.

A confirmatory factor analysis for the independent and moderating variables showed that a four-factor solution (adaptive role behaviour, proactive role behaviour, outcome self-efficacy and role-breadth self-efficacy) was a good fitting model ( $\chi^2$  (59) = 65.84;  $\chi^2$  ratio <2; RMSEA = 0.05, CFI = 0.98). All factor loadings were significant. The four-factor model had a better fit than any alternative model, including a three-factor model with adaptive and proactive role behaviours combined ( $\chi^2$  (62) = 86.95;  $\chi^2$  ratio <2; RMSEA = 0.09 CFI = 0.94), a three-factor model with outcome and role-breadth self-efficacy combined ( $\chi^2$  (62) = 104.10;  $\chi^2$  ratio <2; RMSEA = 0.12; CFI = 0.89), a two-factor model separating role behaviours and self-efficacy ( $\chi^2$  (64) = 123.69;  $\chi^2$  ratio <2; RMSEA = 0.13; CFI = 0.85), and a one-factor model ( $\chi^2$  (65) = 145.29;  $\chi^2$  ratio >2; RMSEA = 0.15; CFI = 0.79). Chi-square difference tests showed that all alternative nested models had a significantly poorer fit.

Supervisors' ratings of overall job performance was assessed using a four-item scale that tapped into a range of important skills and knowledge within the context. To reduce the influence of individual differences in perceptions, and to take into account the fluid team composition characteristic of a 24/7 environment and the range of contextual factors that may affect judgements of junior doctors' overall job performance (from inserting a cannula into a highly agitated psychiatric patient or into an unconscious patient), each junior doctor was rated by multiple senior doctors (between three and seven) on a scale from 1 (requires substantial assistance) to 5 (outstanding performance). Senior doctors only provided overall job performance ratings for junior doctors that

they had supervised during a shift and where they had opportunities to observe their work. Example items include (name of junior doctor): ‘provides accurate, effective synthesis and diagnosis of patients’; ‘takes patient history, puts in canulas/central lines, plastering’. These performance items clustered as expected (exploratory factor analysis using maximum likelihood with oblimin rotation found one factor with an eigenvalue above one explaining 66% of the variance), and the scale was reliable with a Cronbach’s alpha of 0.96.

Nine senior doctors (Supervising Consultants) in total provided the ratings. All senior doctors had over 12 years’ experience in acute settings and had completed specialist training, accredited by the Australasian College for Emergency Medicine. Part of this role involved responsibility for the training and evaluation of junior doctors.

We also included four control variables in the analysis, which were all measured from the junior doctors’ perspective. First, since there is evidence to suggest that negative affect can influence emergent role behaviours (Grant, Parker and Collins, 2009; Hartog and Belschak, 2007), supervisor ratings of performance (Dalal *et al.*, 2012) and that junior doctors are particularly susceptible to high levels of negative affect (Markwell and Wainer, 2009), we controlled for negative work affect using four items from Daniels’ (2000) anxiety subscale. Cronbach’s alpha was 0.80. Second, we controlled for junior doctors’ hospital experience, measured as years of postgraduate medical training, as this is likely to influence experience and judgements of performance. The third and fourth control variables were junior doctors’ proficient role behaviours (i.e. core task performance) (Griffin, Neal and Parker, 2007) and their generalized self-efficacy (Chen, Gully and Eden, 2001). Cronbach’s alphas were 0.70 and 0.69, respectively. We were interested in exploring adaptive and proactive role behaviours over and above proficient role behaviours, in addition to outcome self-efficacy and role-breadth self-efficacy over and above generalized self-efficacy. To measure proficient role behaviours, we used two items adapted from previous research in hospitals (Kaplan, 2001). An example item is: ‘In your most recent shift, how frequently did you ... “provide quality patient care” and “provide timely patient care”’ on a scale from 1 (very infrequently) to 5 (very frequently)?’ To measure generalized self-efficacy, we used three items from the general self-efficacy scale

(Chen, Gully and Eden, 2001). An example item is ‘In general, I think that I can obtain outcomes that are important to me’, on a scale from 1 (strongly disagree) to 5 (strongly agree).

### *Analytical approach*

To investigate the extent to which the overall job performance data as rated by supervisors was nested (i.e. senior doctors rating more than one junior doctor), we ran a one-way analysis of variance with random effects, using hierarchical linear modelling (HLM; Raudenbush and Byrk, 2002). The results suggest that the vast majority of variance in the job performance ratings was nested within junior doctors; nonetheless, a significant amount of variance (15%) in the overall job performance ratings was attributable to the raters ( $\chi^2 = 59.47$ ,  $p < 0.01$ ), so we proceeded with all analysis using HLM. This allows analysis of the hypothesized relationships while controlling for the variance attributable to the raters. Based on recommendations by Aguinis, Gottfredson and Culpepper (2013), we ran a random intercept and fixed slope model. At level 1, we simultaneously entered the four control variables (negative affect, hospital experience, proficient behaviour and generalized self-efficacy), two main effects variables (adaptive and proactive role behaviours) and the two hypothesized interaction terms. All variables were standardized before we entered them into the HLM equation, and the interaction terms were created by multiplying the relevant standardized variables.

## **Results**

### *Validity and descriptive statistics*

Table 1 shows the means, standard deviations, correlation coefficients and reliability estimates for all the variables in this study.

### *Results of hypotheses testing*

For Hypothesis 1, we predicted a direct, positive effect of adaptive role behaviours on supervisors’ judgement of overall job performance. As shown in Table 2, adaptive role behaviour resulted in higher overall job performance ratings: there is a significant direct effect of adaptive role behaviours on supervisors’ ratings of overall job performance

Table 1. Means, standard deviations, correlation coefficients and internal consistency estimates (n = 61)

	M	SD	1	2	3	4	5	6	7	8	9
1. Negative affect	2.06	0.80	<b>0.80</b>								
2. Hospital experience	3.08	3.05	-0.14	–							
3. Proficient role behaviour	3.92	0.60	-0.18	0.24	<b>0.70</b>						
4. Generalized self-efficacy	3.73	0.49	-0.08	0.17	0.21	<b>0.69</b>					
5. Adaptive role behaviour	4.02	0.55	-0.18	0.08	0.47**	0.30*	<b>0.66</b>				
6. Proactive role behaviour	3.41	0.72	-0.08	0.40**	0.10	-0.03	0.30*	<b>0.81</b>			
7. Role-breadth self-efficacy	3.66	0.83	-0.19	0.34**	0.27*	0.01	0.23	0.41**	<b>0.83</b>		
8. Outcome self-efficacy	2.77	0.85	-0.39*	0.46**	0.30*	0.21	0.25	0.36*	0.33**	<b>0.80</b>	
9. Supervisor rating of overall job performance	3.18	0.48	-0.29**	0.38**	0.11	-0.01	0.25	0.22	0.25	0.26*	<b>0.96</b>

Values along diagonal represent internal consistency estimates.

\*p < 0.05 (2-tailed); \*\*p < 0.01 (2-tailed).

Table 2. Results of HLM analysis for the moderating effects of self-efficacy on supervisors' rating of overall job performance

	Supervisors' rating of overall performance
<i>Control variables</i>	
Intercept	3.18***
Negative affect	-0.10*
Hospital experience	0.17***
Proficient role behaviour	-0.07
Generalized self-efficacy	-0.10*
<i>Independent variables</i>	
Adaptive role behaviour	0.21*
Proactive role behaviour	-0.04
Role-breadth self-efficacy	0.09*
Outcome self-efficacy	-0.02
<i>Interactions</i>	
Adaptive role behaviour × outcome self-efficacy	0.09*
Proactive role behaviour × role-breadth self-efficacy	0.11*

Junior doctors n = 336 at Level 1, Raters n = 9 at Level 2. Entries are estimations of the fixed effects (γs).

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

( $\gamma = 0.21$ ,  $p < 0.05$ ) thus providing support for Hypothesis 1. There was no significant direct effect of proactive role behaviours on supervisors' ratings of overall job performance ratings ( $\gamma = -0.04$ ,  $p = 0.44$ , n.s.); thus, Hypothesis 2 was not supported.

Hypotheses 3 and 4 predict differential moderating effects of outcome- and role-breadth self-efficacy on the relationship between role behaviours and supervisors' ratings of overall job performance. Specifically, in support of Hypothesis 3, outcome self-efficacy moderated the relationship between adaptive role behaviours and supervisors' ratings of overall job performance ratings ( $\gamma = 0.09$ ,  $p < 0.05$ ), and in support of Hypothesis 4, role-breadth self-efficacy moderated the relationship between proactive role behaviours and supervisors' ratings of overall job performance ( $\gamma = 0.11$ ,  $p < 0.05$ ).

To help interpret the meaning of these interactions, following procedures used by Aiken and

West (1991) and Dawson (2013), we separately graphed the simple slopes, using values of plus and minus one standard deviation on the moderator variable (i.e. the relevant self-efficacy measure). Figure 2 shows the positive relationship between adaptive role behaviour and supervisors' ratings of overall job performance is stronger for individuals high in outcome self-efficacy. Analysis of the simple slopes revealed that the positive relationship between adaptive role behaviours and overall job performance ratings is significantly different from zero at high levels of outcome self-efficacy ( $\beta = 0.27$ ,  $p < 0.01$ ), but not at low levels of outcome self-efficacy ( $\beta = 0.00$ , n.s.).

Figure 3 shows a positive relationship between proactive role behaviours and supervisors' ratings of overall job performance for individuals high in role-breadth self-efficacy, but this slope was not significantly different from zero ( $\beta = 0.08$ ,  $p = 0.41$ , n.s.). For individuals low in role-breadth

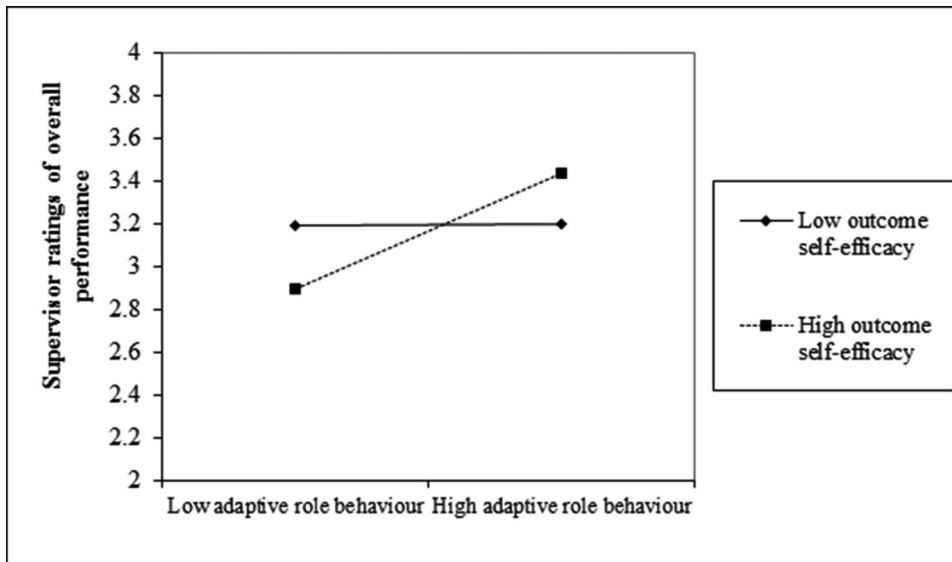


Figure 2. Moderating effects of outcome self-efficacy

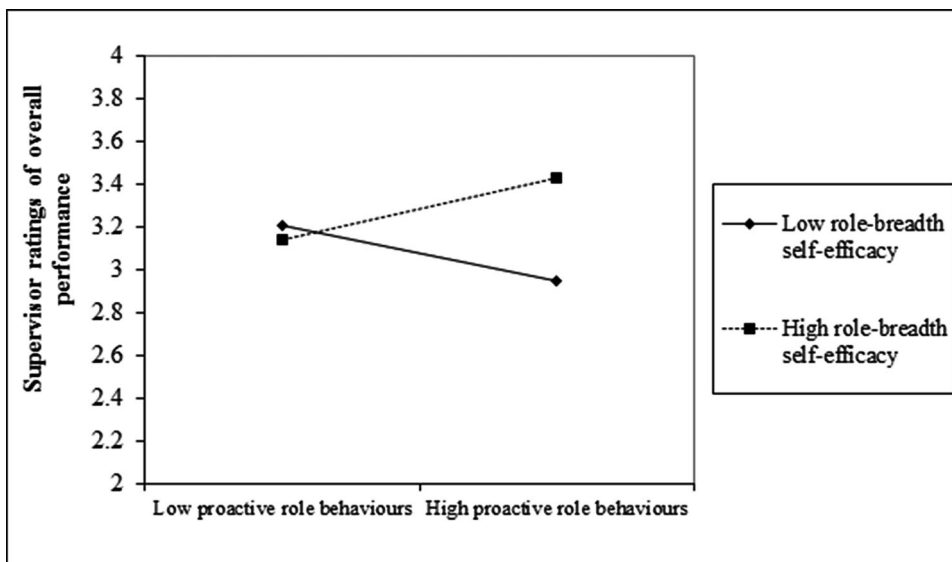


Figure 3. Moderating effects of role-breadth self-efficacy

self-efficacy, there is a negative relationship between proactive role behaviours and supervisors' ratings of overall job performance that is marginally statistically significant ( $\beta = -0.13, p = 0.07$ ).

### Discussion

The aim of this study was to address an important gap in our understanding about the extent to which

supervisors' ratings of overall job performance are influenced by employee work role behaviour that lies beyond the fulfilment of formalized task requirements. We make an important contribution to the literature by examining whether employees' adaptive and proactive role behaviours are actually valued by supervisors, as shown by giving them credit when they judge employees' overall job performance, and if so, under what conditions.

As expected, adaptive role behaviours had a positive significant main effect on supervisors'

ratings of overall job performance, and having self-efficacy for achieving outcomes boosted the positive effects of adaptive role behaviour on these ratings. In the case of proactive role behaviours, we did not find support for the hypothesized positive direct effect. We found that the relationship between proactive role behaviours and supervisors' ratings of overall job performance was contingent on employees' level of role-breadth self-efficacy, such that engaging in proactive role behaviours while also lacking role-breadth self-efficacy resulted in lower ratings of employees' overall job performance by their supervisors. Although conceptual arguments have been made (Bolino, 1999; Frese and Fay, 2001; Grant and Ashford, 2008; Morrison and Milliken, 2000) that being proactive may not always be appreciated by supervisors, this is one of the few studies to demonstrate empirically the potential risks associated with proactive role behaviours.

Overall, the results of this study provide support for our hypotheses that supervisors look to employees' expressed confidence for attribution relevant information. For adaptive role behaviours, supervisors gave more credit to employees with high-outcome self-efficacy, whereas for proactive role behaviours, supervisors gave less credit for employees low in role-breadth self-efficacy. These results strengthen support for conceptual frameworks differentiating adaptive and proactive role behaviours that go beyond proficiency in core tasks (Griffin, Neal and Parker, 2007; Neal *et al.*, 2011). The results of this study also highlight that proactive role behaviours are riskier than adaptive role behaviours, and underscore the importance of understanding how and when these broader work role behaviours influence supervisors' judgement of employees' overall job performance.

By investigating the impact of emergent role behaviours on supervisors' ratings of overall job performance and the moderating role of self-efficacy for specific role behaviours, this study offers a different perspective to the performance evaluation literature, which to date has focused mainly on employee behaviours reflecting proficiency in formalized, pre-specified tasks. As today's work environment is increasingly characterized by uncertainty, it is not possible to formalize all job requirements, and thus there is a greater need for adaptive and proactive role behaviour. Research into how these role behaviours are perceived by

supervisors is therefore pertinent, because if these behaviours are not given credit, organisations may not benefit from these important emergent role behaviours. This study also extends the performance evaluation literature by examining the conditions under which supervisors give and withhold credit for desirable role behaviours in uncertain contexts. Although attributional processing is an important element of the performance evaluation process, until now little has been known about the role that employees' self-efficacy for specific work role behaviours plays as an attributional cue. We demonstrated that, depending on whether emergent role behaviours are implemented, with or without domain-specific self-efficacy, can modify how these emergent role behaviours are interpreted and valued by supervisors. The results of this study provide support for our view that self-efficacy for specific role behaviours influences the causal attributions developed by the supervisor.

Furthermore, the differential moderating effects of different types of self-efficacy provide support for Bandura's (1982) view that self-efficacy is a domain-specific construct and should be relevant to the type of behaviour in question. Since this is the first study to investigate the moderating role of self-efficacy for specific role behaviours in the link between emergent role behaviours and supervisor performance ratings, a productive avenue for future research is to investigate in more depth other types of self-efficacy and to test more directly the mechanism by which role behaviours influence performance judgements by supervisors. Bandura (2001) emphasized the importance of being able to confidently select and create environments that support desired behaviours, but there is a lack of research on these types of self-efficacy (e.g. environmental-change self-efficacy; support-seeking self-efficacy). Perhaps self-efficacy with these wider bandwidths, including those from existing literature such as self-efficacy that focuses on problem-solving (Tierney and Farmer, 2002), may be important for moderating both emergent role behaviours – adaptive and proactive – with supervisor ratings of overall job performance. Beyond self-efficacy, other social and structural factors might moderate supervisors' attributional processing, but have yet to be investigated in the context of role behaviours.

In terms of practical implications, this paper draws attention to the challenges of enacting adaptive and proactive role behaviours, which are

increasingly important as work settings become more dynamic and uncertain. Employees are not always rewarded for these behaviours (which occur over and above effectively executing core aspects of a job). In the case of proactive role behaviours, enacting these behaviours with low role-breadth self-efficacy was even detrimental to supervisors' ratings of overall job performance. The findings of this study also suggest the value of using strategies to build specific self-efficacy for role behaviours, such as through providing mastery experiences with feedback, using verbal persuasion, alongside reinforcing appropriate adaptive and proactive role behaviours with role modelling (Bandura, 1982). Managers also need to be mindful of the dangers of reducing credit or even punishing proactive role behaviours; these dangers need to be replaced and counteracted with opportunities for employees to develop these emergent behaviours, which are becoming increasingly important to the future of organizations.

We acknowledge that this study has several limitations. First, we had a relatively small sample, thus, our results should be viewed with caution. A second limitation is that all variables except for supervisor ratings of overall job performance were same-source, self-report measures, which can lead to common method variance. However, interaction effects, which are at the centre of this research 'cannot be artificially created through CMV [common method variance]. To the contrary, CMV usually causes these nonlinear effects to be deflated' (Siemsen, Roth and Oliveira, 2010, p. 472). A third limitation is that we have explored the relationships of interest within a specific context, an emergency department. Thus, the generalizability of our findings to other uncertain, interdependent contexts needs testing. On reflection, the hospital emergency department context may be an influencing factor for the more positive role that adaptive role behaviour had on supervisors' rating of overall job performance in our findings. The prevailing environmental characteristic of emergency departments is the uncertainty of the workflow and thus the need to constantly adapt. That aside, interviews with consultant doctors pinpointed proactive behaviours as a role expected of the junior doctors thus there may be other contextual factors, such as the supervisory style of the consulting doctors which constrains junior doctors' opportunity to implement and/or be recognized for their proactive role behaviours. The environmen-

tal constraints on role behaviours thus warrant further empirical investigation.

In conclusion, for both adaptive and proactive role behaviours, we found that supervisors do look to employees' expressed confidence for attribution-relevant information when rating overall performance. Adaptive role behaviours had a direct positive relationship with supervisors' ratings of overall job performance, and this relationship was enhanced when employees' were also self-efficacious about achieving work outcomes. Interestingly, the relationship was not straightforward for proactive role behaviours; there was no main effect and the interaction was such that employees with low role-breadth self-efficacy were given less credit, that is, they were given lower ratings of overall job performance by supervisors. This study has important theoretical and practical implications for both employees and supervisors, and paves the way for further investigation into when and why role behaviour contributes positively, or negatively, to performance ratings.

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