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# Antecedents of employee intrapreneurship in the public sector: a proactive motivation approach

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## ABSTRACT

Public servants' intrapreneurship (entrepreneurial actions performed by employees from within an organization) is gaining importance as a micro-foundation of public sector innovation and improved service delivery. This study addresses this topic from a proactive motivation perspective and using weekly diary surveys filled out by 757 public servants from 37 departments of the Dutch national public administration for five consecutive weeks ( $n=2279$  datapoints). Confirmatory factor analyses showed that antecedents of intrapreneurship could be grouped into three categories of proactive motivation: (1) reason-to (prosocial impact, job accountability), (2) can-do (job autonomy, self-efficacy, optimism), and (3) energized-to (work engagement). Multilevel structural equation modeling showed that public servants reported more intrapreneurial behavior when they had more reason-to and were energized-to be proactive. Can-do motivation moderated (strengthened) these relationships. Necessary conditions analyses showed that each predictor was essential, emphasizing the importance of careful alignment of human resource practices aimed at evoking different types of proactive motivation.

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## Introduction

One of the major challenges of the public sector is to stimulate innovation and improve service delivery by allowing employees to enact their entrepreneurial spirit (Demircioglu 2020). This challenge is related to the public sector's shift from traditional public administration, which emphasized accountability, rules, and procedures, to public value management and new public governance. Public value management emphasizes the delivery of public value as the main goal of the public sector (Meynhardt and Diefenbach 2012), whereas new public governance encourages public-private partnerships, co-creation, and co-delivery with citizens (Casady et al. 2020). Studies have shown that employee intrapreneurial behaviors are predictive of sustainable innovation and improved service quality and performance across different industries (Do and Luu 2020; Giang and Dung 2022; Luu 2020; Pellegrini et al. 2019; Wan, Liu, and Wang 2020). In addition, employee intrapreneurship may have positive outcomes for individual employees, such as increased well-being (Ahmetoglu et al. 2021; Gawke, Gorgievski, and Bakker 2017; Pandey, Gupta, and Hassan 2021) and job performance (Gawke, Gorgievski, and Bakker 2018; Mahmoud, Ahmad, and Poespowidjojo 2021a, 2021b).

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Thus, this article has several key aims. First, we introduce the concept of employee intrapreneurship as a specific type of proactive behavior in the public administration literature. Previous scholarly work has been published on public servants' more general proactive behaviors at work, such as extra-role behaviors (Demircioglu and Chowdhury 2021) and the role that these general proactive behaviors play in public sector entrepreneurship or corporate entrepreneurship (e.g., Demircioglu and Chowdhury 2021; Kearney, Hisrich, and Roche 2008). Entrepreneurship refers to individuals starting and operating a company on their own account, and corporate entrepreneurship refers to new business created by organizations, not individuals. In contrast, we will define and operationalize employee intrapreneurship explicitly as agentic and strategic work behavior aimed at organizational self-renewal and business venturing performed by public service workers within the boundaries of their paid jobs (c.f., Gawke, Gorgievski, and Bakker 2019).

Second, from a proactive motivation perspective (Parker, Bindl, and Strauss 2010; Parker and Wang 2015) our study provides researchers with a theoretical model that allows for studying the effects of predictors of employee intrapreneurship in an integrated way. It is our premise that employees' perceptions of these predictors fluctuate per week, for example because of working on different tasks with different motivational qualities (Chen and Fellenz 2020). Based on this notion, we expand the proactive motivation model (Parker et al. 2010) by investigating whether fluctuations in public servants' job and personal resources act as can-do, reason-to, and energized-to motivators, which in turn predict weekly proactive behavior in the form of intrapreneurship. This test of the proactive motivation model contributes to theory by making explicit which job and personal characteristics can foster strategic work behaviors.

A third contribution of the present study is that we investigate the three proposed theoretical predictors of proactive behavior in combination. Previous studies on intrapreneurship have predominantly focused on main effects of organizational and job characteristics irrespective of each other (Kearney and Meynhardt 2016). Also, existing work based on the proactive motivation model has mainly focused on person-environment interactions and investigated whether environmental factors can compensate for a lack of employee proactivity (Parker and Wang 2015), or whether predictors with the same rather than different motivational effects can enhance each other (Cai, Parker et al. 2019). We argue that employee intrapreneurship is most likely during the weeks in which public servants have simultaneous access to various personal and job resources related to different types of proactive motivation, which can boost each other's effects.

Finally, we deliver a two-fold methodological contribution. First, we conduct necessary condition analyses (NCA; Dul 2016) to investigate which types of proactive motivation are absolutely necessary for intrapreneurship. Second, this study has a quantitative week-book design in which changes in proactive motivators and intrapreneurial behavior are measured on regular intervals. This is an important methodological innovation that avoids problems with self-presentation and increases the accuracy of the measurements (Ohly et al. 2010).

## Theoretical background

Intrapreneurship, and its organization-level equivalent corporate entrepreneurship, has been a topic of interest for both practitioners and scholars since the first introduction of the concepts in the 1980s (Burgelman 1983; Pinchot 1985). Three main approaches to employee intrapreneurship can be identified in the literature (Gawke et al. 2019). The first approach builds on the entrepreneurial orientation literature and operationalizes intrapreneurship as employee proactivity, innovativeness, and risk-taking (e.g., de Jong et al. 2015; Preenen et al. 2014). The work on entrepreneurial behavior of public service workers by Demircioglu and Chowdhury (2021) can also be included here. The second approach, which can be labeled the entrepreneurial outcomes approach, operationalizes intrapreneurship as employees' participation in

intrapreneurial projects, or the number of intrapreneurial initiatives employees have implemented (e.g., Guerrero and Peña-Legazkue 2013; Urbano, Alvarez, and Turró 2013). The third approach is a behavioral approach, which defines intrapreneurship as engaging in behaviors that contribute to an organization's entrepreneurial outcomes (e.g., Gawke et al. 2019; Neessen et al. 2019).

In line with the latter, behavioral approach, we conceptualize employee intrapreneurship as a specific form of proactive employee behavior aimed at business venturing and strategic renewal (cf. Gawke et al. 2019). Proactive behavior can be defined as “taking initiative in improving current circumstances or creating new ones” (Crant 2000:436). In the public service domain, employee behavior aimed at strategic renewal may for example include a shift in the allocation of resources to facilitate a service (e.g., intensifying desk-based client support at the cost of telephone-based support to allow faster and more personal services to address citizen complaints). Employee behavior related to business venturing may include the start of a new service for the organization that improves service quality (e.g., the use of digital information and communication technologies to meet personalized citizen demands for online services that are tailored to individual needs, which at the same reduce transaction costs; OECD 2012). Although top management is ultimately responsible for organizational strategic renewal and new venture creation, ample evidence exists that employees at all levels in an organization have the capacity to engage in employee intrapreneurship in their own way (i.e., dispersed intrapreneurship; Belousova and Gailly 2013; Gawke et al. 2019; Globocnik and Salomo 2015; Miao et al. 2018). This behavior-based approach is more specific and allows for more conceptual clarity as compared to the entrepreneurial orientation approach, which uses a very general conceptualization showing significant overlap with many other proactive behaviors. Moreover, employee intrapreneurship differs from the core indicator innovativeness (i.e., the creation and implementation of new and useful products, services, and processes; Janssen 2000), because employee intrapreneurship is not necessarily innovation related (Antoncic and Hisrich 2003). Compared to the intrapreneurial outcomes approach, our conceptualization of intrapreneurship is more fine-grained, capturing proactive activities that are still in an exploratory phase without official mandates or supervisory control (Globocnik and Salomo 2015).

### ***The proactive motivation model***

To shed light on the differential roles that various personal and environmental factors play in predicting intrapreneurship, we build on the proactive motivation model (Parker and Wang 2015; Cai, Parker et al. 2019), which integrates several well-known theories of human behavior (Parker et al. 2010). Accordingly, proactive behaviors are driven by three types of motivation. The first is labeled *reason-to motivation* (i.e., the compelling rationale to be proactive), which maps onto theories that explain why people value a behavior or outcome, such as self-determination theory that explains why people would be intrinsically driven to perform proactive behavior through autonomous motivation (Ryan and Deci 2000). The second is *can-do motivation* (i.e., the belief in oneself to be proactive), which maps for example onto expectancy theory (Vroom 1964) and social cognitive theory (Bandura 1997). The third motivational state is *energized-to motivation* (i.e., a state of both positive affect and arousal), which maps for example onto broaden-and-build theory (Fredrickson 2013).

The three motivational states are triggered by individual characteristics as well as the work context (Parker and Wang 2015). The proactive motivation model further proposes that the strength of the motivational states for a specific proactive behavior depends on the alignment between the motivational source and the specific target behavior (Parker et al. 2010). That is, people's reason-to, can-do and energized-to beliefs would need to be specific for the proactive behavior under study, such as in our case employee intrapreneurship, ensuring close predictor-outcome fit. [Figure 1](#) depicts our conceptual model.

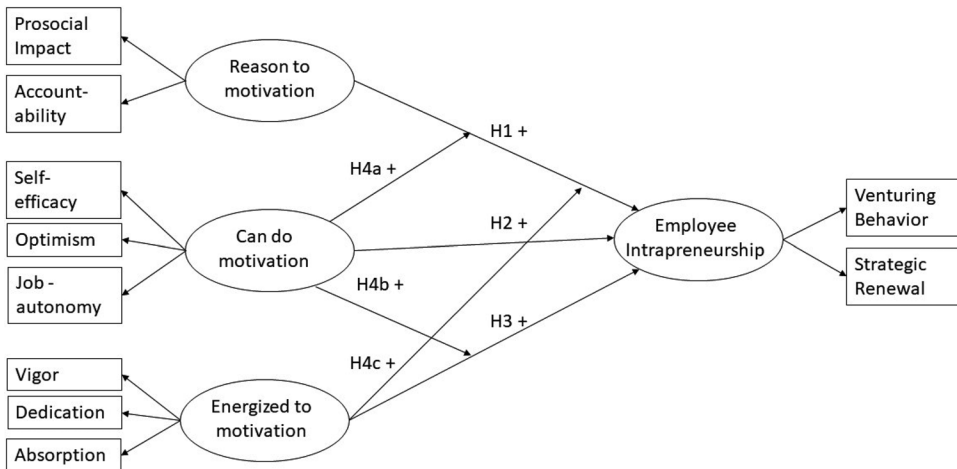


Figure 1. Conceptual model; + indicates the expected direction of the relationship.

### ***“Reason-to” motivation for employee intrapreneurship***

Considering the risk and uncertainty associated with employee intrapreneurship (Gawke et al. 2018), a strong rationale, or reason-to motivation, is needed for individuals to autonomously go beyond prescribed tasks and show intrapreneurial behavior. The proactive motivation model proposes that a strong rationale to be proactive can originate from intrinsic utility judgments in the present (e.g., being proactive is enjoyable), by a future-oriented identity (e.g., proactivity will help me in my career), or from a felt responsibility for an important goal at work (e.g., proactivity is necessary for the success of the project).

In the context of intrapreneurship, we argue that job characteristics that communicate the value and importance of the job, accentuate individuals’ responsibilities, and prompt individuals to utilize their talents are especially relevant as a source of reason-to motivation (Parker and Wang 2015; Shin, Yuan, and Zhou 2017). An important job aspect that especially for public service workers communicates the value of the job and therefore may foster reason-to motivation is prosocial impact, which refers to the experience of making a positive difference in the lives of others through one’s work (Grant 2007). Research has shown that when employees are aware of the meaningful impact their actions have for other people, they are more likely to take risks, question the status quo, and proactively respond to challenges (Meynhardt and Metelmann 2009; Sonnentag and Starzyk 2015). Moreover, a review of 181 scholarly publications on innovation in the public sector (De Vries, Bekkers, and Tummers 2016) showed that tangible indicators of prosocial impact, such as increased involvement of citizens and client satisfaction, were positively related to innovation.

Another job characteristic that may foster reason-to motivation for intrapreneurship is job accountability. This refers to the expectation of having to justify one’s actions to an audience (Tetlock 1985). Job accountability can strengthen employees’ feelings of being responsible to achieve the outcomes for which they are employed (Kearney and Meynhardt 2016), and to take initiative to make that happen (Grant and Parker 2009). Consistent with this idea, a study addressing state governments in the US (Kim 2010) showed that an organizational culture emphasizing accountability to citizens and managers was an important predictor of the entrepreneurial orientation of state government departments. Between-person studies in the public sector have shown that felt responsibility predicted proactive behaviors that share similarities with intrapreneurial activities, such as taking charge to improve work methods and processes (McAllister et al. 2007; Morrison and Phelps 1999), voicing ideas for constructive organizational changes, and taking initiative to improve productivity and

quality. In the present study, we investigate weekly fluctuations in prosocial impact and accountability:

*Hypothesis 1:* Reason-to motivations (prosocial impact and job accountability) are positively related to employee intrapreneurship.

### **“Can-do” motivation for employee intrapreneurship**

Can-do motivation refers to employees’ self-beliefs of their ability to be proactive; their belief that they can successfully adapt to changing situations, to respond proactively, and to approach challenges with enthusiasm and persistence. Proactivity can be risky and its outcomes uncertain. Can-do motivation is suggested to be an important driving force for proactive goal setting and action planning, which helps employees deal with uncertainty, overcome hurdles, and avoid or offset negative consequences (Parker et al. 2010). Personal characteristics corresponding to can-do motivation include self-efficacy and optimism (Bandura 1997; Carver and Scheier 2003). For instance, when an employee champions a new intrapreneurial idea to their supervisor, self-efficacy and optimism may be crucial for coping with potential skepticism and resistance. Indeed, several studies have shown the importance of employees’ self-confidence and self-efficacy for intrapreneurial behaviors (e.g., Di Fabio 2014; Frese and Gielnik 2014; Gawke et al. 2017; Ronen 2010). Similarly, several studies have suggested that optimism is an important can-do antecedent for identifying new opportunities (Solberg Nes and Segerstrom 2006) and the development of innovations in an organization (Camelo-Ordaz et al. 2012).

According to proactive motivation model, antecedents of can-do motivation not only include personal characteristics. Antecedents may also include beliefs regarding environmental control that are anchored in an employees’ job characteristics (Parker and Wang 2015). We argue that job autonomy is an important can-do antecedent of employee intrapreneurship. In many occupations, including public service work, employee intrapreneurship is considered a form of extra-role behavior. Recognizing intrapreneurial opportunities and acting upon them are not part of the formal role description and need to be done in addition to formal job requirements (Gawke et al. 2018). To enable employee intrapreneurship, the job needs to provide sufficient leeway to take on broader roles (Parker 2000). Job autonomy, which means giving employees decision latitude and control over their time schedules, task planning and the methods they use to perform their jobs, provides such leeway. Consistent with this notion, experiencing autonomy relates to public sector managers’ display of entrepreneurial behaviors (Meynhardt and Diefenbach 2012; Meynhardt and Metelmann 2009), and managerial practices aimed at providing public servants with autonomy and participation in decision making increased the entrepreneurial orientation of state government departments (Kim 2010). In other sectors, autonomy motivated employees to redefine their roles and job requirements such that they include broader responsibilities (e.g., Parker, Williams, and Turner 2006). We hypothesize that:

*Hypothesis 2:* Can-do motivations (self-efficacy, optimism, and job autonomy) are positively related to employee intrapreneurship.

### **“Energized-to” motivation for employee intrapreneurship**

In contrast to the more rationally driven *reason-to* and can-do motivational states, the energized-to motivational state is rather emotionally charged (Parker and Wang 2015). The energized-to motivational state is characterized by pleasure (i.e., positive in affective valence) and by high levels of activation (i.e., an active state of mind; Bakker and Oerlemans 2011). These characteristics would be important for proactive behaviors because positive affect broadens employees’ momentary thought-action repertoires (Fredrickson 2013) and high arousal levels provide the fuel to act upon them (Bindl et al. 2012). For instance, in their diary study, Fritz and Sonnentag (2009) showed



that positive affect fostered taking charge behaviors on the same day as well as on the following day. Similarly, Warr et al. (2014) showed across six studies that positive and active affective states (e.g., feeling enthusiastic, inspired) were most strongly related to proactive behaviors.

Flowing from the definition of work engagement as an active positive motivational state (Bakker and Oerlemans 2011), we argue that work engagement may also be an energizing state (i.e., energized-to antecedent) that can stimulate employee intrapreneurship. Engaged employees are employees who are characterized by high levels of vigor, dedication, and absorption (Schaufeli and Bakker 2022). Vigor helps employees to perform their jobs with more ease, resulting in more resources and energy available for intrapreneurial activities. In addition, dedication and absorption provide employees with the enthusiasm and focus to persist and avoid getting distracted or giving up in case of emerging difficulties when engaging in intrapreneurship. Several between-person studies have found a positive relationship between employee intrapreneurship and work engagement (Gawke et al. 2017, 2018). Empirical studies on other proactive behaviors show similar results; high levels of employees' work engagement foster work behaviors that go beyond the scope of their job description (Parker et al. 2006), such as proactive idea implementation and proactive problem solving, and taking initiative. Hence, we propose:

*Hypothesis 3:* Energized-to motivation (work engagement) is positively related to employee intrapreneurship.

### **Combinations of motivational factors**

So far, we have discussed predictors that correspond to the different proactive motivational states separately as additive antecedents of intrapreneurial behavior. In addition, it can be expected that these antecedents interact dynamically in shaping proactivity (Parker and Wang 2015). How the different antecedents of motivational states may interact has been somewhat overlooked. Prior research investigating interactions from a proactive motivation perspective have mainly focused on person-environment interactions (e.g., Fuller, Marler, and Hester 2012; Hong et al. 2016; Cai, Parker et al. 2019). When theorizing about how antecedents of one motivational state interact with antecedents of other motivational states, we therefore go back to the premises of the broader proactive motivation literature, in specific expectancy and resource-based stress theories.

According to expectancy theory (Vroom 1964), people should not only believe that they are capable of performing a certain behavior, but in addition also expect that this behavior will be instrumental for achieving valued outcomes. It can thus be argued that can-do and energized-to motivation are necessary, but insufficient to initiate intrapreneurship. Employees must also expect that intrapreneurship will be instrumental. Building on resource-based stress theory (Gorgievski and Hobfoll 2008; Hobfoll et al. 2018), we also expect that enablers and energizers enhance each other's motivational effects. When facing a challenging situation, people who possess a larger and more varied pool of resources have the potential to apply proactive strategies more effectively. People who lack such resources will rather enter a defensive, reactive mode aimed at self-preservation when facing similar circumstances.

Translated to the context of public sector intrapreneurship, this means that especially public servants with high can-do and energized-to antecedents are inclined to act proactively when they are aware of the meaningful impact their work has on others and when they feel responsible and accountable for delivering good service. This is both because situations are more likely to be interpreted as opportunities rather than threats (cf. Jumelet, Gorgievski, and Bakker 2022), and because people with more can-do and energized-to antecedents are better equipped to employ strategies to reap the benefits of their intrapreneurial actions. Therefore, we propose that each type of motivation (can-do, reason-to, and energized-to) relates more strongly to intrapreneurship when displayed jointly with another one of these three types of motivation.

Studies addressing potential interaction effects between antecedents of intrapreneurial behavior are scarce. One study showed that intrapreneurial self-efficacy was a boundary condition for a

positive relation between perceived organizational support and employees' intrapreneurial behavior (Chouchane et al. 2023). Further evidence comes from studies investigating other forms of proactive behavior. For instance, employees' self-efficacy strengthened the positive impact of managerial support for employee innovation and creativity on innovative behavior of employees working in predominantly service and manufacturing industries (Madrid et al. 2014; Malik, Butt, and Choi 2015). Dong et al. (2023) showed that prosocial motivation enhanced the positive relationship between employees' organization-based self-esteem and proactive customer service in the hospitality industry. Across a variety of industries, Lebel and Patil (2018) showed that prosocial motivation buffered negative relationships between different forms of discouraging leadership behavior—close monitoring, lack of openness and lack of trust—and proactive task behaviors—voicing and taking charge. Zhenyao Cai, Huo et al. (2019) showed that job autonomy enhanced the positive link between prosocial motivation and taking charge in the hospitality industry. Finally, Parker and her colleagues (2015) showed that employees' resilience enhanced the positive impact of job control on employee proactive problem-solving strategies. Therefore:

*Hypothesis 4a:* Can-do motivation strengthens the positive relationship between reason-to motivation and employee intrapreneurship.

*Hypothesis 4b:* Can-do motivation strengthens the positive relationship between energized-to motivation and employee intrapreneurship.

*Hypothesis 4c:* Energized-to motivation strengthens the positive relationship between reason-to motivation and employee intrapreneurship.

## Method

### *Procedure and participants*

Data were gathered using an online questionnaire among public servants working for the Dutch national public administration. With the consent of the board of directors and following the ethical guidelines of the university, we sent an email signed by the general HR-director to all public servants from 37 different departments. The email contained information on the study, a consent form, and a request to voluntarily participate. At the end of the first survey (completed by 3288 public servants, response rate was about 7.76%), participants were asked if they were willing to complete another four questionnaires, one each week for the coming four consecutive weeks. In total, 757 individuals agreed to participate in the longitudinal study (i.e., drop out was 76.98%).

Included were employees from the Ministry of General affairs ( $N=20$  of 353), Ministry of the Interior and Kingdom Relations ( $N=171$  of 9180), Ministry of Foreign Affairs ( $N=48$  of 2652), Ministry of Economic Affairs and Climate Policy ( $N=160$  of 9133), Ministry of Infrastructure and Water Management ( $N=114$  of 12412), Ministry of Education, Culture and Science ( $N=104$  of 4191) and Ministry of Health, Welfare and Sport ( $N=140$  of 4424). Civil servants working for a national ministry are a typical example of public servants. Ministries are government owned and funded and political authorities are the primary stakeholders (Knies and Steijn 2021). They are responsible for the correct and efficient execution of general public administration activities, and in case of our sample the regulation of social services and compulsory social security. Such activities lend themselves well for innovation and intrapreneurial activities, for example through the implementation of novel IT solutions. Like other public sector contexts, the national administration faces dynamic challenges related to twenty-first century trends that affect the nature and practice and not just the content of service delivery work. These include increasingly demanding stakeholders, co-creation with stakeholder networks, use of new media, working with big data, new ways of working, pressures for smarter organizing and budgeting, and a demand for adhering to higher ethical standards (van der Wal 2021). So, studying a sample of employees working for Dutch ministries can inform us more generally about predictors of employee intrapreneurship in the public sector.



One sample T-tests with the average scores of the non-respondents as a reference point showed that the participants who participated in the follow-up surveys scored slightly higher on all study variables. Employees who participated had more job characteristics hypothesized to predict intrapreneurship (for accountability,  $\Delta\text{Mean} = 0.13$ ;  $F_{(702df)} = 3.23$ ,  $p < .005$ ; for prosocial impact,  $\Delta\text{Mean} = 0.14$ ;  $F_{(702df)} = 3.41$ ,  $p < .001$ ; and for autonomy,  $\Delta\text{Mean} = 0.14$ ;  $F_{(702df)} = 4.75$ ,  $p < .001$ ), they also had more psychological resources (for self-efficacy,  $\Delta\text{Mean} = 0.08$ ;  $F_{(702df)} = 3.98$ ,  $p < .001$ ; for optimism,  $\Delta\text{Mean} = .13$ ;  $F_{(702df)} = 5.09$ ,  $p < .001$ ). They scored higher on work engagement ( $\Delta\text{Mean} = .14$ ;  $F_{(702df)} = 4.43$ ,  $p < .001$ ) and higher on intrapreneurial behavior ( $\Delta\text{Mean} = .23$ ;  $F_{(702df)} = 4.96$ ,  $p < .001$ ). The average response rate for the weekly survey was 65% ( $T_0 = 100\%$ ;  $T_1 = 62\%$ ;  $T_2 = 53\%$ ;  $T_3 = 50\%$ ;  $T_4 = 58\%$ ; number of datapoints was 2279). Kim and Bentler's (2002) generalized least squares test showed that missing values of each week were missing at random (MAR;  $p = .68$ ), thus not indicating any further response bias.

The mean age of the participants was 47.78 years ( $sd = 10.61$ ), and almost 52% of the participants were female. Most participants were highly educated: 47.83% held a master's university degree or higher, 34.12% had finished higher vocational education, and 18.05% had finished intermediate vocational education or lower. Participants held a variety of occupations and represented a vast array of work fields within national public administration: advisory 21.61%, operational management 25.43%, policy 11.99%, research and development 6.89%, top management 6.46%, project management 6.06%, control 8.83%, and operations 12.52%. On average, participants had worked in their current position for 6.89 years ( $sd = 7.98$ ).

## Measures

All measures were administered in Dutch. Measures that were not available in Dutch were translated, using the forward-backward translation method (Behling and Law 2000). Participants responded to all measures on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), except for the measures work engagement and employee intrapreneurship, to which they responded on a 7-point Likert scale (1 = never, 7 = every day). All items were reformulated so that they referred to the past week.

*Accountability* was assessed with the seven-item accountability scale from (Hall et al. 2009). Sample items are, "Last week, I was held accountable for my actions at work," and "Last week, I often had to explain why I do certain things at work." Cronbach's alpha ranged between .81 and .82 per week.

*Prosocial impact* was assessed with four items adapted from Grant's (2008) prosocial impact scale. Sample items are, "Last week, the results of my work had a positive impact on others," and "Last week, the results of my work were benefiting others." Cronbach's alpha of the scale ranged between .84 and .88.

*Autonomy* was measured with seven items on the Dutch version of the Work Design Questionnaire (Morgeson and Humphrey 2006), the WDQ-NL (Gorgievski et al. 2016). Sample items are, "Last week, the job gave me a chance to use my personal initiative in carrying out the work," and "Last week, the job allowed me to plan how I do my work." The scale showed good internal consistency. Cronbach's alpha ranged between .91 and .93.

*Self-efficacy* was assessed with a four-item version of the self-efficacy scale of Schwarzer and Jerusalem (2010). Because this four-item version was shown to be reliable in previous studies (e.g., Gawke et al. 2017), we used it to reduce questionnaire length. A sample item is "Last week, I knew what to do, regardless of what happened"). Cronbach's alpha ranged between .82 and .88.

*Optimism* was assessed with a four-item version of the optimism scale of Scheier, Carver, and Bridges (1994), which was also shown to be reliable in previous studies (e.g., Gawke et al. 2017). Example item is "Last week, I expected the best outcomes". Cronbach's alpha ranged between .79 and .87.

*Work Engagement* was assessed with the nine-item version of the Utrecht Work Engagement Scale capturing three sub-dimensions of work engagement, namely vigor, dedication, and

absorption (Schaufeli, Bakker, and Salanova 2006). Here are some example items: “Last week, at my work, I felt bursting with energy” (vigor); “Last week, I was enthusiastic about my job” (dedication); and “Last week, I was immersed in my work” (absorption). Cronbach’s alpha reliability ranged between .92 and .94.

*Employee intrapreneurship* was measured with the eight-item version of the employee intrapreneurship scale of Gawke and colleagues (Gawke et al. 2019). The items measured both employee venture behavior (e.g., “Last week, I undertook activities to reach a new market or community with my organization.”) and employee strategic renewal behavior (e.g., “Last week, I undertook activities to realize change in my organization”). Cronbach’s alpha reliability ranged between .89 to .91.

### **Data analysis strategy**

Because measurements are nested within individuals, our data have a multilevel structure and we, thus, conducted multilevel structural equation modeling (SEM) with maximum likelihood estimation analyses, using MPlus (Muthén and Muthén 2017). Additionally, to test latent interaction effects, we used type=two-level random in conjunction with algorithm=integration. Before testing our hypotheses, we assessed the intra-class correlations for our study variables (i.e., amount of variance at the between-level of analyses) and we investigated the factorial structure of our model (cf., Anderson and Gerbing 1988). For employee intrapreneurship, we created four item parcels as indicators of its respective factor (Little et al. 2002). The remaining three factors were represented by their respective indicators, namely, the latent construct reason-to antecedents by the mean scores of job accountability and prosocial impact; the latent construct can-do antecedents by mean job autonomy, self-efficacy, and optimism; and the latent construct energized-to antecedents by the mean scores of the three subscales of work engagement (vigor, dedication, and absorption).

To assess the fit of all models, we examined the Chi square, ratio Chi Square/degrees of freedom, the Standardized Root Mean Square Residual (SRMR), the Root Mean Square of Error of Approximation (RMSEA; Browne and Cudeck 1993), the Tucker-Lewis Index (TLI), and the Comparative Fit Index (CFI). For the model Chi-square, higher values reflect poor model fit, with Chi square/df ratio of 3.00 accepted as indicating a reasonable fit. RMSEA and SRMR are measures of absolute model fit.  $RMSEA \leq 0.05$  and  $SRMR \leq 0.08$  represent a close fit (Marsh, Hau, and Wen 2004). CFI and TLI correct for model complexity. Higher values represent a better model fit. CFI and TLI values close to 0.95 or higher in combination with  $RMSEA \leq 0.05$  indicate a good fit (Hu and Bentler 1999). Values of 0.90–0.95 indicate a reasonable fit (Kline 2005).

## **Results**

### **Descriptive statistics**

Table 1 shows the means, standard deviations, and zero-order correlations between the observed study variables at both levels of analyses. In line with our expectations, relationships between our reason-to, can-do, and energized-to antecedents and employee intrapreneurship were positive and significant. Like in previous studies, the demographic variables (age, education, tenure, type of contract and salary scale) also showed significant correlations with employee intrapreneurship and the other study variables (e.g., de Jong et al. 2015; Gawke et al. 2019). We included these demographics at the between level of our main analyses.

### **Preliminary analyses**

The intra-class correlations (i.e., amount of variance at the between-level of analyses) for the indicators of our latent variables were 65%-67% for intrapreneurship, 66% for accountability,

**Table 1.** Correlations between the study variables: between-level correlations are shown in the lower diagonal ( $N=771$  respondents, person mean centered scores); the upper diagonal shows the within-level correlations ( $D=2427$  weekly observations; aggregated scores over weeks).

Study variables	Study variables										
	Mean	Std	1	2	3	4	5	6	7	8	9
1. Employee Intrapreneurship <i>Reason-to motivation</i>	2.63	1.14	–	.27**	.18**	.25**	.19**	.16**	.32**	.31**	.37**
2. Prosocial Impact	4.68	0.96	.42**	–	.17**	.23**	.20**	.21**	.26**	.26**	.29**
3. Accountability <i>Can-do motivation</i>	3.53	0.98	.44**	.37**	–	.10**	.09**	.08**	.16**	.11**	.15**
4. Self-Efficacy	2.91	0.48	.46**	.41**	.20**	–	.31**	.17**	.29**	.29**	.26**
5. Optimism	3.72	0.61	.29**	.35**	.13**	.43**	–	.24**	.38**	.38**	.31**
6. Autonomy <i>Energized-to motivation</i>	4.00	0.67	.23**	.20**	.02	.26**	.36**	–	.25**	.24**	.22**
7. Vigor	3.15	0.84	.33**	.39**	.18**	.40**	.63**	.39**	–	.61**	.61**
8. Dedication	3.27	0.90	.37**	.44**	.24**	.37**	.60**	.44**	.82**	–	.64**
9. Absorption	2.94	0.79	.40**	.42**	.23**	.39**	.51**	.36**	.77**	.81**	–

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

**Table 2.** Results of multilevel confirmatory factor analyses for measurement models.

Model	$\chi^2$	df	SRMR				
			within/between	CFI	TLI	RMSEA	AIC
Hypothesized Measurement Model	629.23	50	.05/.07	.96	.94	.07	61763.84
Two Factor Model	764.51	53	.06/.07	.95	.93	.08	61893.12
One Factor Model	1971.28	56	.12/.27	.86	.82	.12	63093.90
Null model	1177.31	71	.25/.17	.92	.89	.08	61653.86
Direct effects model	686.16	68	.05/.05	.96	.94	.06	61168.69

Note.  $\chi^2$  = ChiSquare; df = Degrees of Freedom; SRMR = standardized root mean square residuals (first value refers to within-level and second to the between-level); CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root-mean-square error of approximation; AIC = Akaike Information Criterion.

58% for prosocial impact, 67% for autonomy, 55% for self-efficacy, 65% for optimism, 69% for vigor 76% for dedication, and 69% for absorption. This supports our premise that adequate amounts of variance can be attributed to weekly fluctuations, justifying our multilevel approach.

Next, we built our Measurement Model, including four latent variables, namely reason-to antecedents, can-do antecedents, energized-to antecedents, and *employee intrapreneurship*. To be consistent with our hypothesized and tested model (see below, section “hypotheses testing”), we modeled intrapreneurship at both levels of analyses, while we modeled the three types of antecedents only at the within-level of analyses. Our Measurement Model fit the data well (see Table 2 for an overview of the fit indices of the tested models):  $\chi^2$  (50 df) = 629.23 ( $p = 0.00$ ), SRMR = 0.05 (within) and 0.07 (between), CFI = 0.96, TLI = 0.94, RMSEA = 0.07. Factor loadings were all significant and ranged from 0.47 to 0.96. To validate the theoretical grouping of our predictors, we tested several alternative models, in which different predictors were combined into latent factors. The Measurement Model fitted the data significantly better than a General Predictor Model in which all predictors were loaded into one factor ( $\Delta$  Chi square<sub>( $\Delta$ df = 6)</sub> = 1342.06,  $p < 0.01$  and  $\Delta$  AIC = 1330.06) and a Two Factor model in which we separated psychological predictors, namely absorption, dedication, vigor, optimism, and self-efficacy, and contextual predictors, namely accountability, prosocial impact, and autonomy into different factors ( $\Delta$  Chi square<sub>( $\Delta$ df = 3)</sub> = 135.28,  $p < 0.01$  and  $\Delta$  AIC = 129.28).

### Hypotheses testing

To test Hypotheses 1 – 3, which predict direct relationships between the motivational states and intrapreneurial behavior, we added control variables and all the regression paths to the Measurement Model and labeled this the Hypothesized Model. In the Hypothesized Model, paths were added from the latent factors reason-to, can-do, and energized-to antecedents to employee

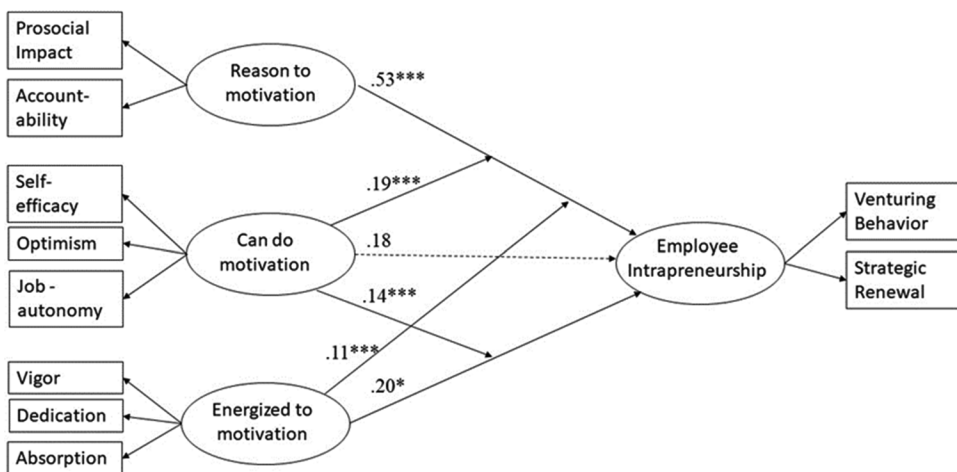
intrapreneurship at the within level analysis, thus modeling whether people would show more intrapreneurial behavior in weeks that they experienced more motivational factors. Covariation of latent predictors were also modeled (cf., Meier and Spector 2013). Note that all the relationships were controlled for age, education, salary scale, type of contract and tenure. The Hypothesized Model showed a good fit to the data:  $\chi^2$  (68 df) = 686.16 ( $p < .01$ ), SRMR = 0.05 (within) and 0.05 (between), CFI = 0.96, TLI = 0.94, RMSEA = 0.06, and fit better than a 0-model in which the paths leading from the predictors to the criterion have been set to zero (See Table 2).

In line with Hypotheses 1 and 3 (See Table 3), results showed that employees displayed more intrapreneurial behavior in the weeks they experienced more reason-to and energized-to antecedents (paths were respectively,  $B = .81$ , S.E. = .10,  $\beta = .53$ ,  $p < .001$  and  $B = .19$ , S.E. = .08,  $\beta = .20$ ,  $p = .02$ ). Weekly can-do motivation only marginally related to weekly intrapreneurial behavior ( $B = .42$ , S.E. = .23,  $\beta = .18$ ,  $p = .06$ ), refuting Hypothesis 2.

To test Hypotheses 4a - c, which predicted that the effect of all three types of antecedents is strengthened when any other type of antecedent is also present, we built three alternative models separately. To do this, each time we added to the within-level of our tested model the effect of one latent interaction between two different types of antecedents on intrapreneurship. In line with Hypothesis 4 a - c, the interaction effects were all significant (see Table 3), namely, reason-to by can-do antecedents ( $B=1.24$ , S.E. = .12,  $\beta = .19$ ,  $p < .001$ ), energized-to by can-do antecedents ( $B = .44$ , S.E. = .07,  $\beta = .11$ ,  $p < .001$ ) and reason-to by energized-to antecedents ( $B = .35$ , S.E. = .05,  $\beta = .14$ ,  $p < .001$ ). Figure 2 shows the final model. Interactions are shown in Figures 3–5.

**Table 3.** Results of the within person relationships between weekly fluctuations in antecedents and weekly intrapreneurial behavior for employees working for the Dutch national administration ( $N=771$  respondents;  $D=2427$  weekly observations).

	B	SE	Beta	P	Hypothesis confirmed?
H1 Reason-to relates positively to employee intrapreneurship.	.81	.10	.53	<.001	Yes
H2 Can-do relates positively to employee intrapreneurship.	.42	.23	.18	.06	No
H3 Energized-to relates positively to employee intrapreneurship.	.19	.08	.20	.02	Yes
H4a Can-do strengthens the reason-to - intrapreneurship relation	1.24	.12	.19	<.001	Yes
H4b Can-do strengthens the energized-to - intrapreneurship relation	.44	.07	.11	<.001	Yes
H4c Energized-to strengthens the reason-to - intrapreneurship relation	.35	.05	.14	<.001	Yes



**Figure 2.** Visualization of the final multilevel SEM results: relationships between weekly fluctuations in reason-to, can-do and energized-to motivators and employee intrapreneurship. Note that all the relationships were controlled for age, education, salary scale, type of contract and tenure.

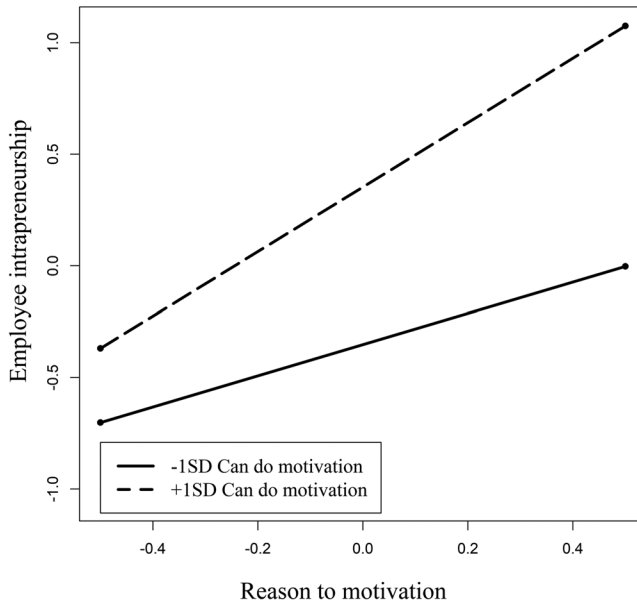


Figure 3. The link between reason-to motivation and employee intrapreneurship moderated by can-do motivation.

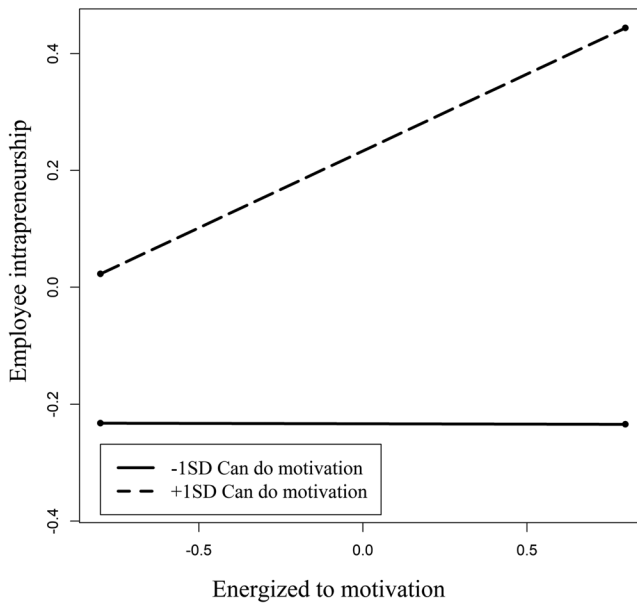
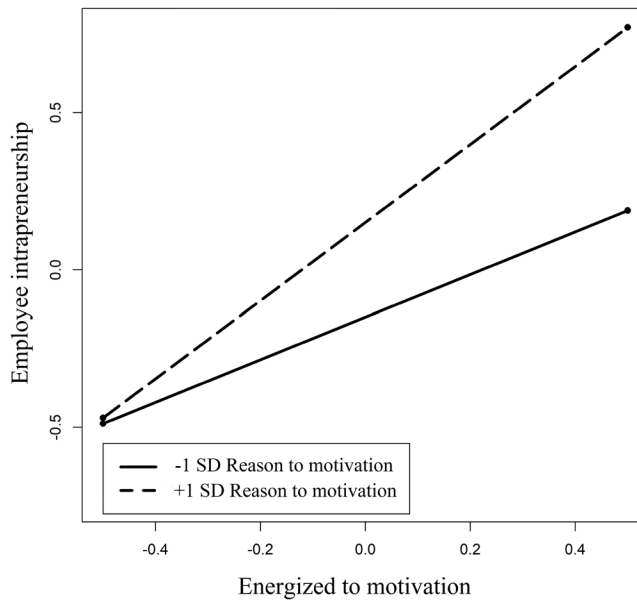


Figure 4. The link between energized-to motivation and employee intrapreneurship moderated by can-do motivation.

Simple slope tests revealed that reason-to antecedents were more strongly related to intrapreneurship when can-do antecedents were 1 SD above the mean (estimate = 1.45, *S.E.* = .12,  $p > .001$ ) compared to 1 SD below the mean (estimate = .70, *S.E.* = .12,  $p < .001$ ; Figure 3). Energized-to antecedents, too, were more strongly related to intrapreneurship when can-do antecedents were 1 SD above the mean (estimate = .26, *S.E.* = .07,  $p > .001$ ) compared to 1 SD below the mean (estimate = .00, *S.E.* = .01,  $p = .99$ ; Figure 4). Finally, simple slope tests revealed that reason-to antecedents were more strongly related to intrapreneurship when energized-to antecedents were 1 SD above the mean (estimate = 1.24, *S.E.* = .11,  $p > .001$ ) compared to 1 SD below the mean (estimate = .68, *S.E.* = .11,  $p > .001$ ; Figure 5).



**Figure 5.** The link between energized-to motivation and employee intrapreneurship moderated by reason-to motivation.

**Table 4.** Bottleneck scores (CE-FDH) showing for which levels of intrapreneurial employee which level of reason-to, can-do and energized-to motivation would be necessary.

Percentage range intrapreneurship	Percentage range reason-to	Percentage range can-do	Percentage range energized-to
0	NN	NN	NN
10	NN	NN	NN
20	22.8	26.1	20.5
30	22.8	26.1	20.5
40	34.4	30.4	20.5
50	40.8	33.8	20.5
60	40.8	37.4	20.5
70	40.8	40.1	20.5
80	40.8	40.1	20.5
90	69.2	62.5	58.8
100	70.3	80.3	75.9

NN = not necessary.

As a final check we have performed NCA, using the envelopment technique with Free Disposal Hull (CE-FDH; Dul 2016). This technique draws a ceiling line on top of an XY scatterplot, above which there is an empty data space or ceiling zone. The ceiling zone indicates that a minimum value of predictor X would be necessary for obtaining certain scores of criterion Y and thus other variables cannot compensate for the absence of X. NCA showed that all variables in our model are necessary (but insufficient) conditions for intrapreneurship to reach values above the lower 10 per cent (See Table 4). The ceiling envelopment with 100% accuracy showed a ceiling zone of 11.45, a scope of 31.90 and an effect size of 0.36 ( $p < 0.001$ ) for reason-to; a ceiling zone of 12.67, a scope of 36.03 and an effect size of 0.35 ( $p < 0.001$ ) for can-do; and a ceiling zone of 6.94, a scope of 27.03 and an effect size of 0.23 ( $p = .016$ ) for energized-to. So-called bottleneck analyses further showed that, for example, to be in the top half of most intrapreneurial employees, reason-to scores needed to be above the 40.8 percentile, can-do scores above the 33.8 percentile and energized-to scores above the 20.5 percentile.

## Discussion

This quantitative week-book study aimed to increase our understanding of the predictors of employees' intrapreneurial behavior within the context of public sector organizations. Potential



antecedents that could be expected to fuel this strategic work behavior were identified based on the management (e.g., Grant and Parker 2009), and work and organizational psychology literatures (e.g., Bakker, Demerouti, and Sanz-Vergel 2023). Next, we tested the theoretical assumption central to the proactive motivation model (Parker et al. 2010; Parker and Wang 2015) that these antecedents can be meaningfully categorized in line with the motivational sources reason-to, can-do and energized-to motivation. Confirmatory factor analyses showed that job accountability and prosocial impact could be categorized as reason-to antecedents; job autonomy, self-efficacy, and optimism as can-do antecedents and the different work engagement dimensions (vigor, dedication, and absorption) as energized-to antecedents. This hypothesized model showed a better fit to the data than the best fitting alternative model often used in the literature, which identifies two higher order factors reflecting “person related” and “environmental”.

The results of multi-level SEM furthermore confirmed that employees displayed more intrapreneurial behavior in the weeks they experienced more reason-to and energized-to motivators. This supports our contention that contextual factors such as accountability and prosocial impact can create reasons to be intrapreneurial, presumably through enhancing valence and utility judgments for intrapreneurship, thus stimulating employees to implement their ideas (Sonnentag and Starzyk 2015). Work engagement can broaden peoples’ action repertoires and stimulate proactive behaviors at work such as intrapreneurship (Bakker et al. 2023). In line with the basic premise of expectancy theory (Vroom 1964; see also Hong et al. 2016) that being able to do something is not sufficient, can-do antecedents did not explain any additional variance in employee intrapreneurship over and above reason-to and energized-to antecedents. Apparently, having the environmental and personal resources are simply tools; people also need to see the usefulness or the fun and have the energy to engage in a certain behavior (see also Op den Kamp et al. 2018).

In further support of this notion, hierarchical moderator SEM showed that can-do motivation played a key role as an enhancer of the motivational effects of weekly reason-to and energized-to motivation. The link between job ambiguity and job accountability on the one hand and intrapreneurial behavior on the other hand was stronger for employees perceiving more enablers. The link between energized-to motivation and intrapreneurial behavior was enhanced by both can-do and reason-to motivation. Moreover, energized-to motivation (work engagement) only related to intrapreneurial behavior when can-do motivation was high. This confirms that for engaged employees to be intrapreneurial, sufficient leeway in the form of autonomy and personal resources is essential, otherwise they might rather invest their energy in task-related behavior that does not go beyond one’s professional role. Additional NCA showed that in fact all motivational factors were necessary but insufficient conditions for displaying employee intrapreneurship, indicating they need to be present simultaneously.

### ***Theoretical and practical implications***

Our results have several theoretical implications. First, this study expands the literature on public sector intrapreneurship by introducing the concept of employee intrapreneurship as proactive behavior of individuals resulting in strategic renewal and business venturing. Next, it shows which specific job and person related characteristics are predictive of this strategic proactive behavior on a weekly basis.

Second, it advances the intrapreneurship literature in general by providing a coherent theoretical framework to guide research on its antecedents and consequences. The categorization of predictors as related to reason-to, can-do and energized-to motivation may provide an interesting addition to other categorizations proposed in the literature. Of these, Job-Demands Resources (JD-R) theory (Bakker et al. 2023) is currently the most widely used alternative. This theory posits that job demands and resources indirectly relate to proactive work behavior *via* work engagement. When demands and resources are regarded as direct rather than indirect predictors of specific types of proactive work behavior, it is essential that scholars specifically identify those demands and resources

that function as reason-to and can-do antecedents of the specific type of work behavior rather than general predictors of work engagement, ensuring predictor-outcome fit (Parker et al. 2010).

Third, previous studies on proactive behavior addressing interactions have shown that environments operating as strong situations stimulating employees to be proactive may compensate for an individual employees' lack of proactive propensity as a personality trait (Parker and Wang 2015). Building on the trait-activation hypothesis, the contention that predictors with the same motivational effect can enhance each other has also received some support (Cai, Parker et al. 2019). Building on expectancy theory (Vroom 1964) and resource-based stress theory (Gorgievski and Hobfoll 2008; Hobfoll et al. 2018) our study extends this line of research by showing that interactions between different types of motivators should not be ignored either. When investigating indicators of different motivational states, an enhancing effect can be expected to prevail over a compensation effect. More importantly, our results imply that predictors addressing different areas of human motivation are all necessary conditions that cannot compensate for each other.

As an important practical implication our results underscore that creating a coherent bundle of well-aligned HR practices is key for stimulating strategic proactive work behavior (Knies and Steijn 2021). This study shows it should at least include the following.

First, the job needs to provide a strong rationale for employees to engage in venturing and renewal behavior. When employees engage in intrapreneurial activities, they often must adopt a dual role at work, juggling both the management of ongoing in-role activities and pursuing intrapreneurial opportunities (Kearney et al. 2008; Morris, Webb, and Franklin 2011). If a reason-to be intrapreneurial is not present, employee intrapreneurial activities are likely to be inhibited by more clearly defined and immediately rewarding in-role responsibilities (Shin et al. 2017). This may be especially true for public service employees, whose work has traditionally been characterized by a rule-driven, processual nature. This study showed that prosocial impact and accountability provide a strong rationale for employees to take on an intrapreneurial role. This means that to stimulate employee intrapreneurship, public service organizations can be advised to communicate a more entrepreneurial vision that emphasizes the prosocial impact individual employees have in addition to the message that each employee in their own way is expected to play a role in the organizations' aim for continuous improvement of service delivery and public value creation.

Second, HR policies and procedures would need to be aligned with this vision, which means that the job would need to provide opportunities that enable intrapreneurial behavior. This can be achieved using enriching job redesign techniques that increase employees' autonomy and sense of accountability. Employees could for instance be assigned additional responsibilities and be stimulated to participate in decision making (Parker 2014). Job redesign could also be used to energize employees and increase employee engagement. Intervention studies have shown that employees are able to become and stay energized at work through increasing aspects of work that are (a) functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate personal growth and development (Kooij et al. 2017; e.g., Van Wingerden, Derks, and Bakker 2017). This means that employees' job demands need to be challenging and provide workplace learning opportunities on the one hand (cf., Huang and Lai 2020), and ample job resources on the other hand (Bakker et al. 2023). Next to job autonomy, job resources could include coworker and supervisor support.

Focusing solely on improving job design would not be enough. This study showed that personal resources such as optimism and self-efficacy are essential can-do antecedents as well. Organizations would need to make sure that employees have the potential to capitalize on the opportunities in the work environment. They could, for example, select employees who score above average on these personal characteristics, or provide coaching and training. Examples of training interventions are micro interventions aimed at increasing psychological capital (e.g., Bakker and Van Wingerden 2021; Luthans, Avey, and Patera 2008). Other examples are job crafting interventions, which are individuals' own job redesign behaviors through which employees idiosyncratically improve their own job design and at the same time manage their own work engagement (Oprea et al. 2019).

### **Limitations and future studies**

In addition to its merits, this study also has its limitations. First, our study focused on a specific subsample in the public sector. Relevant differences exist between different types of public organizations, for example in the level of publicness—the extent to which they directly deliver services to civilians (Knies and Steijn 2021). Teachers, health care workers, police officers and workers for the local government more directly deal with the public daily. Highly public organizations are generally confronted with determined efforts to control them, which comes with less discretionary room and more red tape. Research has shown that when the public does not recognize the difficulties and hazards of service workers' jobs, the link between prosocial motivation and proactive behavior is attenuated (Patil and Lebel 2019). In addition, not all public service organizations are necessarily government owned. Public organizations also differ in whether they have a central or local focus and there are structural differences such as their size, which can all relate to the extent employees feel room to innovate and be intrapreneurial.

In addition, the respondents in our study scored higher on all study variables than the non-respondents did, which may indicate that the topic was more relevant to them (response-bias). It can be speculated that a larger variance in the study variables might have led to stronger, but not qualitatively different results. After all, non-respondents scored low on both the antecedents and intrapreneurial behavior. However, it cannot be concluded with certainty that our results can be extrapolated to employees who score very low on all motivational antecedents.

Second, our study focused on a limited number of indicators that were chosen to reflect the three motivational states. It is likely that the number of indicators in the study influences the number of factors that emerge. It can be argued that reasons to be intrapreneurial are eminently environmental and feeling energized is typically personal. As concerns enablers, however, it seems far more likely that when including a larger number of personal and environmental enablers, two factors will emerge similar to the job and personal resources identified in JD-R theory (Bakker et al. 2023). Future studies could include more indicators. It could, for example, be fruitful to investigate variables related to employees' psychological contracts, such as a perceived expectation to be intrapreneurial (cf. the obligation to innovate, Ramamoorthy et al. 2005). Researchers could also take a process perspective and include explanatory mechanisms, such as opportunity recognition, exploration, and exploitation (c.f., Kraus et al. 2019; Neessen et al. 2019), to investigate in more detail which part of the intrapreneurial process is influenced by job design characteristics.

Third, our study focused on short-term, within person processes and was not designed to capture long-term relations between job design, personal enablers, and employee intrapreneurship. The interval of our study was based on a literature review of studies that captured the influence of job design and personal resources on proactive work behaviors. However, based on the literature, recursive relationships are also plausible. A previous study, for example, has shown that public intrapreneurship can build personal resources such as self-efficacy and optimism (Gawke et al. 2017). Other scholars have argued that prosocial impact may be a consequence of employee intrapreneurship because intrapreneurship entails collaboration with diverse occupations and stakeholders (e.g., Peled 2001). Direct contact between public servants and different stakeholders would foster awareness of prosocial impact (Grant 2007). Examining dynamic, reciprocal psychological processes involving employee intrapreneurship may be a fruitful avenue for future research. As the process of organizational rejuvenation typically encompasses longer time periods (Antoncic and Hisrich 2003), an interval spanning at least a year would be needed to provide valuable insights into such bi-directional effects of intrapreneurship. A final limitation of our study is our reliance on self-reports only. Future research may use multi-source data to gain a richer understanding. For instance, stakeholder-scores can be used to investigate whether intended prosocial impact is indeed perceived as such, and job design features can be operationalized based on observations.

## Conclusion

The present study showed that the proactive motivation model provides a fruitful framework to explain why and when employees engage in intrapreneurial behavior on a weekly basis. For employees to fully exploit the intrapreneurial opportunities at work, it is essential they have a compelling reason to do so, feel they can do so, and are sufficiently energized. Our study identified employees' sense of accountability and seeing opportunities for prosocial impact as indicators of reason-to motivation; job autonomy, self-efficacy, and optimism as indicators of can-do motivation; and work engagement as energized-to motivation. Moreover, our results further expand and refine the proactive motivation model by showing evidence for synergistic effects of predictors related to different motivational states, which were all identified as necessary conditions. Predictors related to one motivational state boost the relationship between predictors related to another motivational state and intrapreneurial behavior if they are present at the same time. This emphasizes the importance of careful alignment of different types of predictors.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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