



Intrapreneurs, high performers, or hybrid stars? How individual entrepreneurial orientation affects employee performance

Coen Rigtering^{a,*}, Thomas Niemand^b, Vinh Phan^c, Jason Gawke^d

^a Utrecht University, Utrecht University School of Economics, Entrepreneurship Section, P.O. Box 80125, 3508TC Utrecht, The Netherlands

^b Clausthal University of Technology, Institute of Management and Economics, Department of Management and Market Research, Albrecht-von-Groddeck-Strasse 7, 8678 Clausthal-Zellerfeld, Germany

^c Erasmus University Rotterdam, Erasmus School of Economics, Burgemeester Oudlaan 50, 3062 PA Rotterdam, The Netherlands

^d Utrecht University Utrecht University, School of Economics Entrepreneurship Section, P.O. Box 80125, 3508TC Utrecht, The Netherlands

ARTICLE INFO

JEL Classification:

M50
M54
M19

Keywords:

Entrepreneurial Orientation
Individual Entrepreneurial Orientation
Intrapreneurship
Entrepreneurial Self-Efficacy
Employee Work Performance
Extra Role Behavior

ABSTRACT

Recently, scholars have extended the concept of entrepreneurial orientation to the individual level. Yet, how individual entrepreneurial orientation (IEO) contributes to employee performance is not well understood. Building on role theory, we develop a novel typology of employee performance that distinguishes between employee behavior aimed at achieving in-role performance and employee engagement in intrapreneurial activities. To test how IEO affects the different performance prototypes of this typology, we collected survey and archival data on IEO, entrepreneurial self-efficacy (ESE), employee in-role performance, and engagement in intrapreneurship in a Dutch subsidiary of an international consultancy firm. Our results show that IEO is positively associated with in-role performance and intrapreneurship. ESE is also positively associated with in-role performance and intrapreneurship, albeit indirectly via IEO. These results mark an initial step in unraveling the impact of IEO on employee and firm performance, as well as why different outcomes occur as a result of IEO.

1. Introduction

To better understand how entrepreneurial orientation (EO) leads to firm performance, researchers (e.g., Covin et al., 2020; Kraus et al., 2019; Mustafa et al., 2018) recently started investigating the role of individual entrepreneurial orientation (IEO). IEO captures an employee's attitudes toward entrepreneurial behaviors and is assumed to foster EO as a result of the collective pursuit of entrepreneurial opportunities below C-level (Covin et al., 2020). How IEO contributes to employee performance is, however, not well understood (Hughes et al., 2018; Ritala et al., 2021). Employees with high levels of IEO may find ways to optimize existing processes, products, or services (Hughes et al., 2018). These novel contributions are generally welcomed by organizations and have become an integrative part of (in)formal job requirements (Good & Michel, 2013; Griffin et al., 2007). Yet, previous research (e.g., Covin et al., 2020; Kraus et al., 2019) has typically neglected that IEO might not be directly related to an employee's work role and that it can also result in venturing and strategic renewal activities that are not prescribed by role or context. Such intrapreneurial

activity can have beneficial performance outcomes but also carries the potential to disrupt current operations and failures may harm an employee's performance and energy at work (Gawke et al., 2018; Kuratko et al., 2023; Wiklund & Shepherd, 2011). Our research question is: What are the outcomes of IEO and how is IEO related to employee performance?

To differentiate between outcomes of IEO and to understand the relationships between these outcomes, we draw on role theory (Griffin et al., 2007) and develop a typology of employee performance that distinguishes between employee behavior aimed at meeting formal job requirements and achieving in-role performance (Griffin et al., 2007; Van Dyne et al., 1995) and their engagement in intrapreneurial activities (i.e., agentic projects that may result in venturing or strategic renewal, see Gawke et al., 2019). We argue that intrapreneurial activity exposes an employee to a variety of (career-related) risks (Rigtering & Weitzel, 2013) and that it may negatively affect their performance evaluations (de Stobbeleir et al., 2010; Kuratko et al., 2023). We use social cognitive theory (Bandura, 1989, 1991) to theorize how IEO and feelings of self-efficacy affect risk perceptions and channel employee behavior

* Corresponding author.

E-mail addresses: j.p.c.rigtering@uu.nl (C. Rigtering), thomas.niemand@tu-clausthal.de (T. Niemand), v.phan@ese.eur.nl (V. Phan), j.c.l.gawke@uu.nl (J. Gawke).

<https://doi.org/10.1016/j.jbusres.2024.114596>

Received 25 April 2023; Received in revised form 16 February 2024; Accepted 21 February 2024

Available online 24 February 2024

0148-2963/© 2024 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

towards in-role performance, intrapreneurship, or a combination of the two. Social cognitive theory posits that individuals evaluate the likelihood of success in congruence with, a.o., their attitudes and convictions regarding their capabilities (Michaelis et al., 2022). This combination allows us to provide a more holistic view of how IEO affects decision-making. For the empirical part of our study, we collected survey data within a Dutch subsidiary of an international consulting firm. We combine this survey data with data from the human resources department and data from the subsidiaries' intrapreneurship platform.

Our study extends the IEO literature by developing a novel typology of employee performance and by theoretically advancing and empirically studying the links between IEO, entrepreneurial self-efficacy, and the different performance prototypes of this typology. Doing so provides a first step toward understanding how IEO contributes to employee performance, firm performance, and why different outcomes occur as a result of IEO (Covin et al., 2020; Wales et al., 2021).

2. Theory and hypotheses

2.1. A social cognitive perspective on individual entrepreneurial orientation

“An organization-wide EO is present when organizations display a tendency to respond to internal and external challenges, changes, and competition in an entrepreneurial manner.” (Covin et al., 2020, p. 2). Historically, EO research has attributed this organization-wide tendency to the behaviors and attitudes of top-level managers that are geared toward risk-taking, proactiveness, and innovativeness (Wales et al., 2021). More recently, scholars (e.g., Covin et al., 2020; Kollmann et al., 2020; Wales et al., 2011, 2020, 2021) have argued that EO may be manifested in a number of more generalized manners as individuals or teams may exhibit EO and can support the development of an organization-wide EO through their entrepreneurial endeavors. IEO then captures the attitudes of these lower-level managers and non-managerial employees toward exploring new ideas, seizing opportunities, and accepting risks while responding to organizational changes, external demands, and performance targets (Covin et al., 2020; Mustafa et al., 2018).

Attitudes, such as IEO, are generally conceptualized as behavioral dispositions that predict and explain human behavior (Ajzen, 1991). As an attitude, IEO captures the degree to which a person has a favorable or unfavorable evaluation or appraisal of entrepreneurial behavior in general (Ajzen, 1991). There are various opportunities that an employee with high levels of IEO can pursue. Deciding which opportunity to enact encompasses a complex decision-making process during which an employee assesses his or her chances of success in relation to their capabilities, behavioral dispositions, goals, and related environmental conditions (see Bandura, 1989; Michaelis et al., 2022). Crucially, these assessments are regulated by forethought; individuals form beliefs about what they can and cannot do, set goals, and plan courses of action that are likely to produce desired outcomes (Bandura, 1991). Through the exercise of forethought, people can convert future events into current motivators and regulators of behavior (Bandura, 1991). Two key mechanisms that guide these anticipatory cognitive processes are efficacy expectations and outcome expectations (Bandura, 1989).

Efficacy expectations are generally assumed to be based on perceptions of self-efficacy. Self-efficacy can be defined as “an individual's belief in one's capability to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). In the context of entrepreneurship, however, specific abilities (such as the ability to deal with the uncertain and ambiguous context of entrepreneurship) drive success and scholars often rely on the domain-specific concept of entrepreneurial self-efficacy (ESE) to predict behavior (Salmony & Kanbach, 2022). ESE can be defined as a person's belief in their ability to successfully launch an entrepreneurial initiative and captures an individual's belief in his or her capability to complete the process of

identifying opportunities to bring about significant change (McGee et al., 2009). The ability to envision the likely outcomes of prospective actions (i.e., outcomes expectations) is another way in which anticipatory mechanisms regulate agency (Bandura, 1989). Individuals strive to gain anticipated advantageous outcomes and neglect adverse ones.

2.2. Outcomes of IEO: In-role performance versus intrapreneurship

Employees contribute to the performance of the teams, departments, and organizations in which they are embedded by performing the duties and responsibilities associated with their assigned roles (Sonnentag et al., 2008). Organizational roles can be defined as the full set of work responsibilities associated with the occupancy of a given job or position within an organization (Griffin et al., 2007). Work roles can be formalized using job descriptions that specify the tasks that employees have to perform and the standards that they need to achieve. The employees' proficiency in performing these tasks is expected to be an important part of the performance assessment. However, in organizations in which work systems lack predictability, organizational roles commonly also include elements associated with high levels of IEO like adaptivity, proactivity, and teamwork (Covin et al., 2020; Griffin et al., 2007). Especially in recent years, where firms have to consistently deal with new technologies and need to digitalize their offerings, adaptivity has become a key element of employee performance (Ritala et al., 2021).

Role expectations delineate behaviors and form the basic foundation for expectations by colleagues and superiors concerning behavior and performance (Van Dyne et al., 1995). Roles are, however, idiosyncratic (Miner, 1987), meaning that employee behaviors are not limited to expectations by relevant others. When employees voluntarily go beyond expectations to benefit the organization, this is referred to as extra-role behavior (Van Dyne et al., 1995). A distinct form of entrepreneurial extra-role behavior that is characterized by agency and “its specific focus on new venture creation and strategic renewal” (Gawke et al., 2017, p. 89), is intrapreneurship. The element of agency in intrapreneurship emphasizes that employees need to autonomously decide to engage in new venture creation and/or strategic renewal for it to

Table 1
Key definitions.

Concept	Definition
EO	An organization's tendency to respond to internal and external challenges, changes, and competition in an entrepreneurial manner.
IEO	The attitudes of lower-level managers and non-managerial employees towards exploring new ideas, seizing opportunities, and accepting risks while responding to organizational changes, external demands, and performance targets
Entrepreneurial self-efficacy	A person's belief in their ability to successfully launch an entrepreneurial initiative and to complete the process of identifying opportunities to bring about significant change.
Outcome expectation	The ability to envision the likely outcomes of prospective actions.
In-role performance	The extent to which employees meet (in)formal job requirements.
Extra-role behavior	Voluntary behavior that is to the benefit of the organization and beyond the expectations of relevant others.
Intrapreneurship	A distinct form of extra-role behavior that is characterized by agency and its specific focus on new venture creation and strategic renewal.

constitute extra-role behavior.¹ Table 1 summarizes the different definitions that have been used thus far.

Whereas exceeding role requirements has often been positively linked to in-role performance evaluations (Griffin et al., 2007; Sonnentag et al., 2008), engaging in intrapreneurship does not necessarily lead to in-role performance. Organizations might value intrapreneurial activities and might integrate them into the organization (Burgelman, 1983; Gawke et al., 2019). When this happens, employees are expected to receive some kind of recognition for their efforts (e.g., shares, promotion, bonus, and/or public recognition), and their successes are likely to be reflected in their in-role performance. Yet, there are several conditions under which intrapreneurs are expected to experience lower performance than their non-intrapreneurial counterparts. First, intrapreneurship requires a substantial time investment, commitment over prolonged periods, and persistence to push projects forward (Gawke et al., 2019; Globocnik & Salomo, 2015). This may come at the expense of employees' devotion to their regular tasks and can lead to exhaustion, causing some intrapreneurs to have a lower in-role performance during project development (Gawke et al., 2019; Good & Michel, 2013; Hughes et al., 2018). Second, intrapreneurial actions carry an almost inherent level of risk and failure can negatively affect a manager's perception of an employee. Risks are not limited to those employees who develop unrealistic ideas or fail in terms of execution. Even a well-thought-out intrapreneurial project can still fail or may not be recognized as a positive contribution to the organization (Chisholm, 1987). Third, while pushing their intrapreneurial projects forward, employees often have to engage in "unorthodox actions that are intended to be useful in addressing immediate challenges and opportunities under conditions of uncertainty" (Fisher et al., 2020, p. 1012). These unorthodox actions can easily be taken a step too far so that they negatively affect a manager's perception of the overall functioning of an employee at work (Kuratko et al., 2023). Finally, engaging in intrapreneurship provides an ambiguous signal to a supervisor. It can be interpreted as going above and beyond in-role performance but also as a signal that the employee focuses too much on personal 'pet' projects (de Stobbeleir et al., 2010). Taken together, our theorization leads us to suggest that an intrapreneur is not necessarily recognized by their managers as a high performer.

Consequently, we develop a typology (see Fig. 1) that defines employee performance along two dimensions: (a) in-role performance, which explains to what extent employees adequately perform the duties associated with their organizational role, including elements like adaptivity, proactivity, and citizenship, that support the execution of their role and (b) whether employees autonomously decide to step out of the boundaries of their formal role by engaging in new venture creation and strategic renewal. In our typology, employees who perform their assigned roles within acceptable standards are part of Quadrant 1 (Ordinary Performers). Their in-role performance is about average and they do not step out of their assigned role by engaging in venturing or strategic renewal. This is not to say that employees in this quadrant do not make other positive contributions to the organization. For example, they might contribute by helping co-workers.² High Performers (Quadrant 2) are the employees who are highly productive, adaptive, social, and excel in their work. Yet, their contributions to the organization remain closely aligned with their formal duties. Intrapreneurs (Quadrant 3), are employees who perform their assigned roles within acceptable standards but do engage in venturing or strategic renewal. As argued before, in-role performance might suffer as a result of engaging in intrapreneurship and even famous intrapreneurs such as Ken Kutaragi (Sony, PlayStation), Steven Sasson (Kodak, digital camera), and Richard Drew (3 M, sandpaper) initially faced managerial opposition. Hybrid Stars

(Quadrant 4) combine in-role performance with intrapreneurship. These employees manage to develop intrapreneurial activities while retaining excellent in-role performance. Alternatively, their in-role performance might suffer but they gain sufficient visibility and goodwill to ensure that their intrapreneurial efforts are reflected in their in-role performance evaluations. If employees combine intrapreneurship with high levels of in-role performance, they can truly be seen as 'star' performers as the skills and mindset to excel at one's job and to initiate venturing and strategic renewal are oftentimes not the same (Good & Michel, 2013).

It is important to emphasize that the performance prototypes within our typology are not permanent and that employees may move from one category to another. For example, an employee who substantially improves his/her in-role performance may move from Quadrant 1 or 3 to Quadrant 2 or 4 (or vice versa). Similarly, an employee who autonomously decides to develop an internal venture may move from Quadrant 1 or 2 to Quadrant 3 or 4 (or vice versa).

2.3. The effect of IEO on the different employee performance prototypes

We posit that employees with higher levels of IEO differ from employees with lower levels of IEO on two crucial dimensions. First, employees with high levels of IEO are expected to frequently experiment with new ideas and/or technologies (see Covin et al., 2020; Hughes et al., 2018). While doing so, they are more likely to identify opportunities for improvements and/or to engage in an iterative learning process that could lead to the formation of an opportunity. Second, employees with higher levels of IEO are expected to value initiatives that challenge the status quo and to be willing to take the risks associated with entrepreneurial endeavors. In other words, next to being more likely to identify opportunities, IEO changes the outcome expectations in such a way that the likelihood that an employee envisions positive outcomes of these opportunities increases.

The opportunities that employees with high levels of IEO identify can either be related or unrelated to their organizational role. Pursuing opportunities that are directly related to their organizational role (e.g., optimizing work processes, products, or services related to their tasks and duties) is expected to benefit an employee's in-role performance (Griffin et al., 2007; Van Dyne et al., 1995). When employees autonomously pursue opportunities outside of their role with the intent to engage in venturing or to initiate strategic renewal, they engage in intrapreneurship (Gawke et al., 2017; Rigtering et al., 2019). As argued before, we do *not* expect that intrapreneurship will always result in high levels of in-role performance (or visa versa). Engaging in intrapreneurship exposes the employee to risks, distracts them from their regular work (Gawke et al., 2019), increases the likelihood that they need to take unorthodox actions (Kuratko et al., 2023), and may send an ambiguous performance signal to their direct supervisor (de Stobbeleir et al., 2010). Employees who engage in intrapreneurship as a result of IEO may, therefore, display lower levels of in-role performance. Another possibility is that IEO may manifest in in-role performance but not in intrapreneurship. Organizational conditions might demotivate employees who have high levels of IEO from engaging in intrapreneurship. For example, when employees believe that an intrapreneurial opportunity will not gain the support of top management, has a high chance of failure, and/or will face significant resistance, it becomes less likely that employees envision positive outcomes (Bandura, 1989, 1991). Similar arguments can be made for employee initiatives aimed at optimizing existing processes, products, or services related to one's tasks and duties. Yet, the likelihood that employee anticipate negative outcomes of these types of projects is much smaller as they generally entail less risk and they are aligned with (in)formal role expectations (Griffin et al., 2007). This leads to our first series of hypotheses.

Hypotheses 1a, b, c: *Employees with high levels of IEO are more likely to be (H1a) High Performers, (H1b) Hybrid Stars, or (H1c) Intrapreneurs.*

¹ Developing a new venture as part of one's formal role or in response to managerial requests thus constitutes as in-role behavior.

² The inclusion of other types of extra-role behaviors in the typology of employee performance is beyond the scope of this paper.

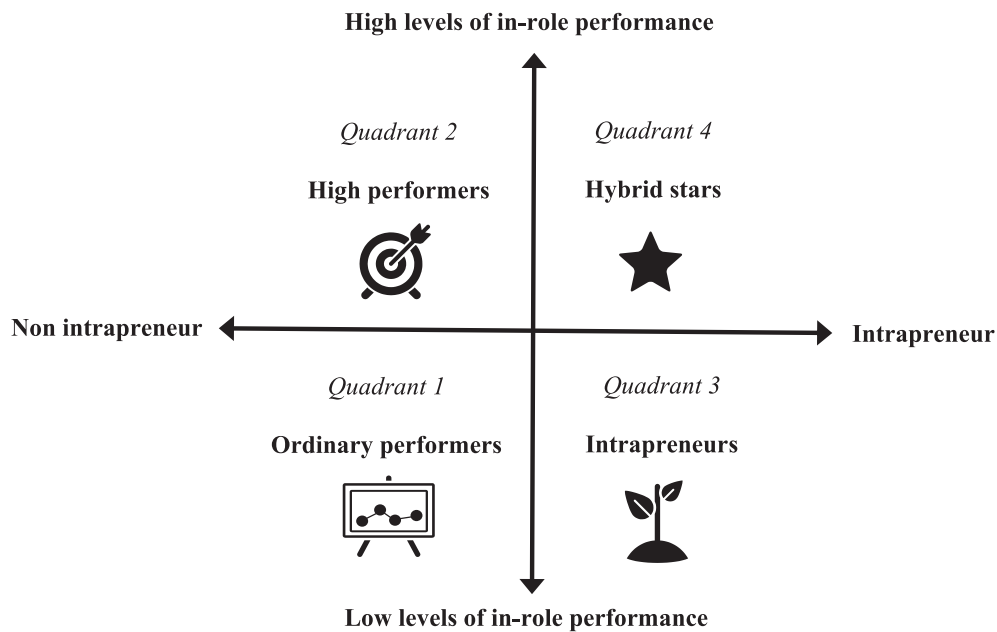


Fig. 1. A typology of employee performance. *Notes:* To be considered an intrapreneur (x-axis), an employee needs to autonomously decide to take the lead in developing and implementing a new venture or strategic renewal. High in-role performance (y-axis) denotes a situation in which an employee clearly exceed (in) formal role requirements.

2.4. The indirect effect of ESE via IEO

Even though ESE is expected to directly change the assessment of a specific opportunity that is identified (e.g., by visualizing more successful outcomes and reducing anxiety, Khanin et al., 2022), we posit that ESE affects the performance of employees indirectly via IEO. ESE relates to a belief in one’s capability to complete an entrepreneurial endeavor while the tendency to be open to new ideas, to experiment, and to take action when opportunities emerge (IEO) captures aspects of both alertness and action that are essential to intrapreneurship (Gawke et al., 2019; Rigtering et al., 2019). ESE does strengthen IEO as self-efficacy changes the value and valence of entrepreneurial behavior (Bandura, 1989; Shue et al., 2018). Specifically, ESE affects employees’ perceptions of the success rate of an entrepreneurial endeavor, with higher levels of ESE bolstering their confidence to exploit opportunities that other employees may regard as being ‘too risky’ (Bandura, 1997). In addition, employees with high levels of ESE are likely to develop a positive attitude towards experimenting with new ideas (creativity), spotting entrepreneurial opportunities, and proactively engaging in entrepreneurial efforts (Salmony & Kanbach, 2022). ESE thus indirectly increases the likelihood that employees identify opportunities that are related (leading to in-role performance) or unrelated (leading to intrapreneurship) to their organizational role via IEO. This leads to our second series of hypotheses.

Hypotheses 2a, b, c: ESE increases the likelihood that employees are (H2a), High Performers, (H2b) Hybrid Stars, or (H2c) Intrapreneurs indirectly via IEO.

3. Methods

3.1. Setting and sample

The empirical research was conducted in a Dutch technology consulting division of a large international consultancy firm (hereafter: the division). The division was selected as (information) technology consulting is a rapidly changing field in which employees are constantly exposed to new technologies, experiences, and innovations as they move from one client to another. Such conditions are key to the development

of new ideas and intrapreneurship. At the same time, the consultancy industry is known for its demanding work environment with high levels of work pressure, strict deadlines, and a focus on employee performance, causing a trade-off between in-role performance and intrapreneurship.

English is the official language of communication in the division. Hence, all communication and the survey were conducted in English. The measures were adapted such that they accurately reflect the organizational jargon. At the time of the survey, about 686 people were employed at the division, of which 660 were active as technology consultants and 26 as support staff. We only included the technology consultants in our sample. The HR department provided demographic information for each employee and their annual performance assessment. Invitations were sent via email and included a unique,

Table 2
Descriptive statistics.

Variable	Distribution	Statistics
Position	<ul style="list-style-type: none"> Associate: 28 (8.9%) Analyst: 46 (14.7%) Senior Analyst: 54 (17.3%) Consultant: 66 (21.1%) Senior Consultant: 90 (28.8%) Manager: 18 (5.8%) Senior Manager: 10 (3.2%) 	Median: 4
Gender	<ul style="list-style-type: none"> Women: 40 (12.8%) Men: 272 (86.9%) Not specified: 1 (.3%) 	Median: 1
Age	<ul style="list-style-type: none"> 25% quartile: 29 50% quartile: 32 75% quartile: 35 Minimum: 22 Maximum: 54 	Mean: 32.87 SD: 6.31
Tenure years	<ul style="list-style-type: none"> 25% quartile: 2 50% quartile: 5 75% quartile: 8 Minimum: 0 Maximum: 33 	Mean: 5.45 SD: 4.29

anonymized identifier for matching. We received 313 valid responses (a response rate of 47.42 percent). The descriptive statistics are provided in Table 2.

3.2. Measures

3.2.1. In-role performance

In-role performance is measured by the divisions' internal performance ratings obtained from the HR department. The in-role performance of consultants is determined by multiple metrics and the division's HR department aggregates all relevant information into a single rating that indicates the employees' level of work performance. All ratings are stratified across the employee's peer group which is determined by their formal position. 0.32 percent of the consultants received the highest rating (five), while 6.07 percent received the lowest rating (one). Ratings two (32.91 percent), three (22.36 percent), and four (38.34 percent) are more frequent. Whether consultants are developing intrapreneurial activities is not part of the performance assessment.

3.2.2. Engagement in intrapreneurship

To identify intrapreneurs, we combine two approaches. First, we tracked which consultants actively participated in the division's internal intrapreneurship platform during the 18 months prior to the survey. Every month, the intrapreneurship platform organizes meetings during which consultants can present ideas and progress, and can ask for support to further develop their intrapreneurial activities. The type of ideas that are submitted and developed via the platform range from new product/service development to suggestions for changes in the firm's internal operating procedures. In line with Rigtering et al. (2019), we consider a consultant to be an intrapreneur if he or she presents ideas in front of company management, acquires support for further development, and takes the lead in the development of the project.

The division's internal intrapreneurship platform supports a large share but not all of the intrapreneurial projects. To capture additional intrapreneurial activities, we added the Global Entrepreneurship Monitor (GEM) indicator for intrapreneurship to the survey. This indicator measures if individuals, during the last 18 months, developed new business activities for their employer (see Bosma et al., 2013). We code a consultant as an intrapreneur if he or she actively participated in the division's intrapreneurship platform and/or was identified as an intrapreneur through the GEM intrapreneurship indicator (coded as 0 = non-intrapreneur, 1 = intrapreneur).

3.2.3. Individual entrepreneurial orientation

Previous studies (e.g., Covin et al., 2020; Mustafa et al., 2018) have argued that IEO, similar to EO, consists of the sub-dimensions innovativeness, risk-taking, and proactiveness. However, the way EO has been transformed into an individual-level construct has been subject to critique (Lumpkin & Pidduck, 2021). The critique has centered around the one-on-one translation of firm-level innovativeness to the individual level as it disregards the crucial element of generating novel ideas (Gawke et al., 2019; Mustafa et al., 2016). To properly operationalize IEO as an individual-level construct, we, therefore, replace innovativeness with creativity (defined as the generation of ideas that are novel and useful from an organizational perspective, see Shalley & Zhou, 2008). To measure creativity, we use the scale developed and psychometrically validated by Miron et al. (2004). To measure proactivity, we used the shortened six-item proactive personality scale by Li et al. (2010). Finally, for risk-taking, we use the scale by Gomez-Mejia and Balkin (1989) which is designed to measure an individual's willingness to take risk in the context of his/her job. All items were measured on a seven-point Likert-type scale, ranging from completely agree (7) to completely disagree (1).

3.2.4. Entrepreneurial self-efficacy

ESE is operationalized as consisting of the sub-dimensions searching, planning, marshaling, implementing-people, and implementing-financial (please see McGee et al., 2009 for a detailed description of the ESE sub-dimensions). We slightly modified items from the McGee et al. (2009) ESE scale to reflect the type of skills that are relevant for developing a variety of intrapreneurial projects within the division. All items were measured on a seven-point Likert-type scale, ranging from very confident (7) to not confident at all (1).

3.3. Operationalization of the employee performance prototypes

To estimate the effect of IEO and ESE on the different employee performance prototypes, we create four distinct categories of employee performance by combining the measures for in-role performance and intrapreneurship. In line with the median of performance ratings (3) we regard only those that received top performance ratings (i.e., a rating of four or five) as high performers. If an employee receives a performance rating of three, two, or one, we regard this employee as an ordinary performer. Combining this with our intrapreneurship indicator creates the four employee performance prototypes displayed in Fig. 1.

3.4. Analytical approach

We apply covariance-based structural equation modeling (SEM). Initially, we assess the reliability and validity of our constructs via confirmatory factor analysis (CFA). Then, common method bias is inspected by estimating the average variance explained (AVE) from CFA when all first-order dimensions of IEO and ESE are assumed to be of one source (Podsakoff et al., 2003). Finally, we conduct an SEM using the four groups of employee performance as dependent variables. We use a two-stage probit SEM with a diagonally weighted least squares (DWLS) estimator, which has been found to provide robust estimates (e.g., Flora & Curran, 2004). All subsequent estimations are conducted in R using the standard settings of *lavaan* for CFA and SEM (argument *ordered*) to increase transparency. We provide additional details in the methodological appendix.

4. Results

The CFA revealed reliable measures for all three sub-dimensions of IEO (α : Proactiveness = 0.79, Risk-taking = 0.80, Creativity = 0.84) and ESE (α : Searching = 0.89, Planning = 0.88, Marshaling = 0.82, Implementing-people = 0.90, Implementing-financial = 0.96). With respect to convergent validity, all sub-dimensions except for proactiveness (AVE = 0.40) scored AVE's > 0.50 (lowest: Risk-taking = 0.51, highest: Implementing financial = 0.90). Applying the approach recommended by Rönkkö and Cho (2022), discriminant validity was confirmed as well, since all differences between an unconstrained correlation and a constrained correlation equal to 0.90 remained significant (smallest difference between proactiveness and creativity: $r = 0.66$, Chi-squared = 52.21, $p = .00$). On the second-order level, IEO (partial $\omega = 0.84$), as well as ESE (partial $\omega = 0.96$), indicated sufficient reliability (see Zinbarg et al., 2005). IEO and ESE correlated substantially ($r = 0.76$), but clearly below 0.90 (confidence interval = [0.67, 0.85]). The CFA fitted the data well ($df = 377$, CFI = 0.93, SRMR = 0.06) approaching acceptable cut-offs (Niemand & Mai, 2018). Using the recommendations by Mai et al. (2021), this fit was very close to the fit of a correct model ($p = .01$: CFI ≥ 0.92 , SRMR ≤ 0.05). Advancing to common method bias procedures, a CFA accounting for only one common method factor fitted the data poorly ($df = 405$, CFI = 0.45, SRMR = 0.13) and accounts for 30.42 percent of shared variance in the measures of IEO and ESE.

The ordered SEM, which independently predicts Ordinary Performers, High Performers, Intrapreneurs, and Hybrid Stars, allowed us to confirm multiple hypotheses. Using one-sided tests (as our hypotheses

are directional), IEO increased the likelihood of being a High performer ($b = 0.87, z = 2.00, p = .02$), Hybrid Star ($b = 2.84, z = 3.93, p = .00$) or Intrapreneur ($b = 7.02, z = 4.14, p = .00$). Likewise, Ordinary Performers corresponded with low IEO ($b = -1.85, z = -4.68, p = .00$). Hence, hypotheses H1a, H1b, and H1c are confirmed. In an exploratory manner, ESE decreased the likelihood of being an Intrapreneur ($b = -3.22, z = -2.92, p = .00$) and increased the likelihood of being an Ordinary Performer ($b = 0.93, z = -2.97, p = .00$), while ESE was irrelevant for High Performers ($b = -0.43, z = -1.38, p = .08$) and Hybrid Stars ($b = 0.08, z = 0.18, p = .43$).

Using SEM-based mediation, indirect effects of ESE on group affiliation via IEO supported hypotheses H2a, H2b, and H2c. High Performers ($b = 0.52, z = 1.95, p = .03$), Hybrid Stars ($b = 1.70, z = 4.21, p = .00$), and Intrapreneurs ($b = 4.20, z = 3.75, p = .00$) are all positively mediated by IEO while Ordinary Performers ($b = -1.10, z = -4.02, p = .00$) are negatively mediated by IEO. Consequently, while Ordinary Performers and Intrapreneurs are directly and indirectly predicted by ESE, ESE only indirectly affects High Performers and Hybrid Stars via IEO. All direct and indirect effects are depicted in Fig. 2. Overall, direct and indirect effects, as well as the control variables, predicted variance in group affiliation substantially (High Performers: 18.6 percent, Hybrid Stars: 32.2 percent, Intrapreneurs: 26.3 percent, Ordinary Performers: 23.5 percent).

5. Discussion

Our novel typology sheds new light on the performance implications of IEO. Specifically, our results show that IEO increases the likelihood that employees are High Performers, Intrapreneurs, or Hybrid Stars while decreasing the likelihood that employees perform according to (or

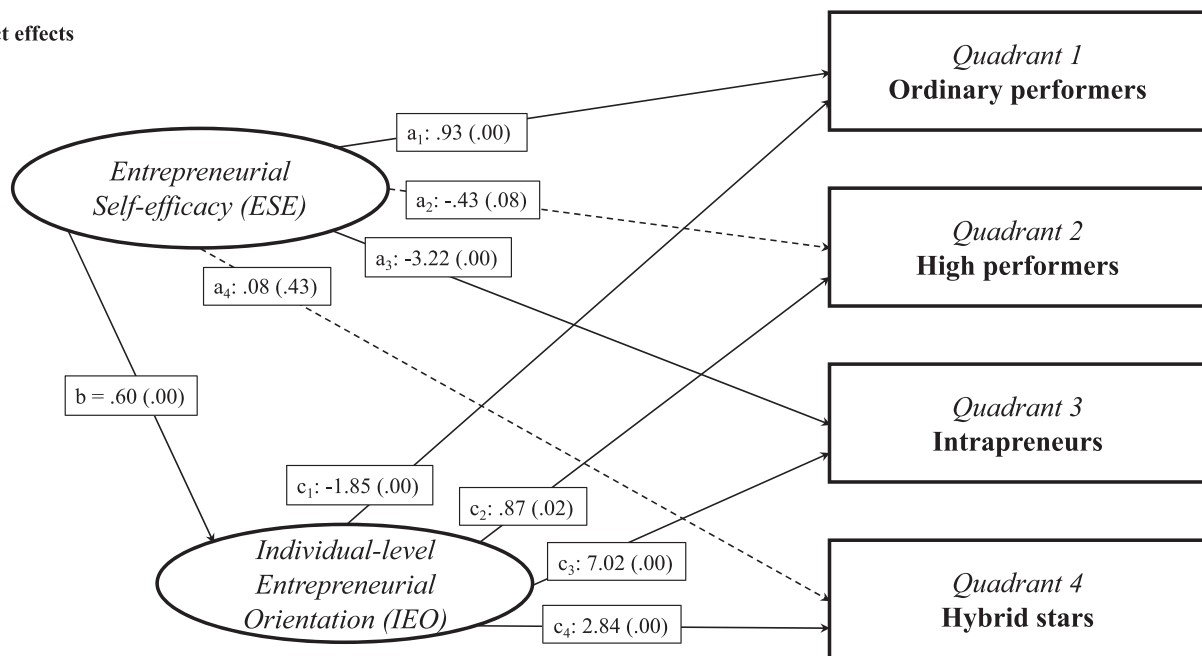
below) expectations. These findings highlight the importance of adopting a positive attitude toward exploring new ideas, seizing opportunities, and accepting risks among lower-level managers and non-managerial employees. ESE also exhibits an association with in-role performance and intrapreneurship, albeit via a more complex and indirect pathway involving IEO. This indicates that ESE mainly supports the development of an IEO while the willingness to take risks, to experiment, and to be proactive results in favorable performance outcomes. Taken together, these findings emphasize that IEO affects performance via different channels and that ESE has differential effects on employee performance as detailed in the following paragraphs.

5.1. Theoretical implications and suggestions for future research

5.1.1. The outcomes of IEO and its impact on firm performance

Our typology of employee performance helps to elucidate the different outcomes of IEO and the channels through which IEO might contribute to firm performance. The type of performance outcome matters because of the risks associated with the development of internal ventures and bottom-up strategic renewal (Burgelman, 1983; Wiklund & Shepherd, 2011). When IEO mainly results in employee in-role performance, IEO is expected to support EO and firm performance via a consistent stream of incremental improvements that aggregate to the firm level (Covin et al., 2020). When IEO mainly results in venturing and strategic renewal, the relationship with firm performance becomes more complex. Lower-level managers and non-managerial employees have a less complete and thorough understanding of firm-level strategies and their intrapreneurial initiatives are expected to be less aligned with current strategies and operations than those developed by higher-level managers (Burgelman, 1983). As such, venturing and renewal by

Direct effects



Indirect effects

- ESE → IEO → Ordinary performers ($b * c_1$): $-1.10 (.00)$
- ESE → IEO → High performers ($b * c_2$): $.52 (.03)$
- ESE → IEO → Intrapreneurs ($b * c_3$): $4.20 (.00)$
- ESE → IEO → Hybrid stars ($b * c_4$): $1.70 (.00)$

Notes. Ordinal SEM for group affiliation (two-stage, DWLS estimator), Unstandardised coefficients (one-tailed p-value), Path coefficients with $p > .05$ dashed, Notation for direct and indirect effects (a, b, c) follows Iacobucci et al. (2007).

Fig. 2. Direct and indirect effects of ESE and IEO on employee performance prototypes.

lower-level managers and employees is expected to result in diversification and new perspectives (Burgelman, 1983; Rigtering et al., 2019). While this can be beneficial for firms, a lack of strategic fit increases the likelihood of failure and decreases the likelihood that initiatives are integrated into the organization. Even when initiatives are not integrated, they can still hurt the organization as company resources may have been wasted during the development, and managerial attention is squandered.

As the idea that organizations with the same level of IEO have different outcomes and risk profiles is new to the EO literature, our study serves as a precursor to future (multi-level) studies that seek to study the relation between IEO, EO, and firm performance in more depth. Such studies should also further explore (a) the conditions under which positive outcomes are more likely to occur and (b) under which organizational conditions employees are more likely to deploy their IEO for in-role performance or venturing and renewal.

5.1.2. ESE, IEO, and employee performance

The antecedents of IEO have been studied from various perspectives (Soltanifar et al., 2023). For example, Rigtering and Weitzel (2013) focus on the role of the organizational context while Mustafa et al. (2016) focus on psychological safety. Yet, it was still unclear why some employees with high levels of IEO decide to engage in venturing and/or strategic renewal while others prefer safer alternatives (also see Soltanifar et al., 2023). By identifying how ESE, indirectly via IEO, affects employee performance our study reveals how efficacy expectations and attitudes shape intrapreneurial decision-making. In social cognitive theory, efficacy expectations and attitudes shape decisions in conjunction with contextual factors including organizational culture, organizational structure, clues provided by higher-level managers, etc. (Bandura, 1991, 1997). Combining such elements can provide a more holistic view of IEO-related decisions and can help to further unravel the IEO-performance relationship. For example, how employees respond to managerial initiatives that support intrapreneurship (see Rigtering et al., 2019) or entrepreneurial behavior by middle managers (see Mustafa et al., 2016) may be dependent on their level of ESE and IEO, and may affect their decision to pursue risky endeavors in complex ways.

Finally, we did not hypothesize a direct effect of ESE on the performance prototypes of our typology but our exploratory analysis shows that ESE increases the likelihood that employees are Ordinary Performers while decreasing the likelihood that employees become Intrapreneurs. In other words, although ESE generates favorable employee performance outcomes via IEO, the direct effect on employee in-role performance can be negative and ESE can even decrease the likelihood that employees engage in intrapreneurship. Most likely, IEO acts as a suppressor variable (i.e., it suppresses criterion-irrelevant variance from the initial predictor, see Paulhus et al., 2004). Because the skills associated with ESE are not related to the core tasks of the vast majority of the employees in the division, using these skills in a manner that is not directly related to IEO might be damaging to employee performance. For example, individuals with high levels of ESE but low levels of IEO might develop new ideas in their spare time that are unrelated to their work. Such activities distract employees from their company tasks, resulting in lower levels of in-role performance. Our exploratory findings support this notion. However, subsequent research needs to investigate this in more detail. Such research can also examine the differential effects of the dimensions of ESE and IEO, given the dimensionality of both constructs and the potential overlap between them.

5.2. Managerial implications

Especially during digital transformations (Ritala et al., 2021) or when work systems lack predictability (Griffin et al., 2007), employees' intrapreneurial qualities become particularly valuable. Traditional talent management systems, however, often overlook these

intrapreneurs, focusing instead on high performers (Fleisher et al., 2022). As a consequence, traditional talent management systems can actually discourage intrapreneurial activity in times when they are most needed. Our study emphasizes the importance of looking beyond conventional aspects of performance and acknowledge the unique contributions of intrapreneurial employees that are not directly reflected in measures of in-role performance. The typology and measures that we developed provide a clear framework and can be used as practical tools for managers to implement a more comprehensive performance and incentive scheme. In addition, at the organizational level, our typology can provide insights into how employees are distributed across the quadrants and can aid strategic decision making. For instance, the typology can be used to make comparisons between teams, departments, and business units; providing insights into the share of intrapreneurs, higher performers, and hybrid stars. When the vast majority of the employees that engage in intrapreneurship are in Quadrant 3 (Intrapreneurs) instead of Quadrant 4 (Hybrid Stars), this can be a signal that intrapreneurship is undervalued. Moreover, when the vast majority of employees are in Quadrant 1 and Quadrant 2, this could indicate that employees are not confident enough and/or do not experience a supportive environment to actually engage in intrapreneurial endeavors. Top management may then consider creating a more supportive environment for intrapreneurship.

Our study, furthermore, shows the value of IEO for both employee in-role performance and intrapreneurship. Firms may benefit from systematically hiring employees with high levels of IEO and we recommend relying on IEO assessments when selecting candidates. Finally, in terms of increasing the level of IEO amongst existing staff, our study highlights that self-efficacy plays a crucial role in enabling IEO. It is well established that an individual's level of self-efficacy can be enhanced through training and training in agile project management (e.g., SCRUM) might be an effective way to increase the level of IEO within a firm (Bachmann et al., 2021).

5.3. Limitations

Besides the directions for future research that we identified above, we highlight some limitations of the present study. First, although we largely rely on objective indicators for employee performance and intrapreneurship, the cross-sectional nature of the research makes it impossible to make any inferences about causality. Second, the data is collected in a single organization with a workforce that mainly consists of full-time male consultants. Although the division provides a good setting to test our model, we invite others to replicate our study in other settings. Third, the division supports intrapreneurship through various platforms and channels. Although this is a representative situation, this forced us to rely on a combination of objective and self-reported indicators for intrapreneurship. Finally, there is considerable overlap between ESE and IEO in the empirical part of our study. Even though our analysis shows that ESE and IEO are distinct concepts and it is difficult to imagine a situation in which individuals with high levels of ESE do not display high levels of IEO, future studies should dive deeper into the ESE-IEO relationship.

5.4. Conclusions

By distinguishing between different types of performance outcomes we found (1) that IEO is positively associated with in-role performance and intrapreneurship, and (2) that ESE exhibits an indirect positive association with both types of performance outcomes. These results have important implications for future studies that seek to unravel the relationship between IEO, EO, and firm performance. We encourage scholars to further explore how IEO affects performance, including the conditions under which non-favorable outcomes may occur.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CRediT authorship contribution statement

Coen Rigtering: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Data curation, Conceptualization. **Thomas Niemand:** Writing – review & editing, Visualization, Methodology, Formal analysis, Data curation. **Vinh Phan:** Writing – original draft, Methodology, Formal analysis, Data curation. **Jason Gawke:** Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

Acknowledgements

The authors would like to thank Utz Weitzel and Achiel Fenneman for their help during the data collection phase. We are indebted to the management team and innovation officers of the Division, who requested to remain anonymous, for their support during the entire research project.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jbusres.2024.114596>.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Bachmann, A. K., Maran, T., Furtner, M., Brem, A., & Welte, M. (2021). Improving entrepreneurial self-efficacy and the attitude towards starting a business venture. *Review of Managerial Science*, 15(6), 1707–1727.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 175–184.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2), 248–287.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman.
- Bosma, N. S., Wennerkers, A. R. M., Amorós, J. E., Guerrero, M., Martíarena, A., & Singer, S. (2013). *Global Entrepreneurship Monitor: Special report on entrepreneurial employee activity*. Babson College.
- Burgelman, R. A. (1983). Corporate entrepreneurship and strategic management: Insights from a process study. *Management Science*, 29(12), 1349–1364.
- Chisholm, T. A. (1987). Intrapreneurship and bureaucracy. *S.A.M. Advanced Management Journal*, 52(3), 36–40.
- Covin, J. G., Rigtering, J. P. C., Hughes, M., Kraus, S., Cheng, C.-F., & Bouncken, R. B. (2020). Individual and team entrepreneurial orientation: Scale development and configurations for success. *Journal of Business Research*, 112(May), 1–12.
- de Stobbeleir, K. E. M., Ashford, S. J., & de Luque, M. F. S. (2010). Proactivity with image in mind: How employee and manager characteristics affect evaluations of proactive behaviours. *Journal of Occupational and Organizational Psychology*, 83(2), 347–369.
- Fisher, G., Stevenson, R., Neubert, E., Burnell, D., & Kuratko, D. F. (2020). Entrepreneurial hustle: Navigating uncertainty and enrolling venture stakeholders through urgent and unorthodox action. *Journal of Management Studies*, 57(5), 1002–1036.
- Fleisher, C., Van Wetten, S., & Rigtering, J. P. C. (2022). Talent management for intrapreneurship: Taking stock of the current state of the field & developing avenues for future research. In I. Tarique (Ed.), *Routledge Guide to Talent management* (pp. 244–276). Routledge.
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, 9(4), 466–491.
- Gawke, J. C., Gorgievski, M. J., & Bakker, A. (2017). Employee intrapreneurship and work engagement: A latent change score approach. *Journal of Vocational Behavior*, 100(June), 88–100.
- Gawke, J. C., Gorgievski, M. J., & Bakker, A. B. (2018). Personal costs and benefits of employee intrapreneurship: Disentangling the employee intrapreneurship, well-being, and job performance relationship. *Journal of Occupational Health Psychology*, 23(4), 508–519.
- Gawke, J. C., Gorgievski, M. J., & Bakker, A. B. (2019). Measuring intrapreneurship at the individual level: Development and validation of the employee intrapreneurship scale (EIS). *European Management Journal*, 37(6), 806–817.
- Globocnik, D., & Salomo, S. (2015). Do formal management practices impact the emergence of bootlegging behavior? *Journal of Product Innovation Management*, 32(4), 505–521.
- Gomez-Mejia, L. R., & Balkin, D. B. (1989). Effectiveness of individual and aggregate compensation strategies. *Industrial Relations: A Journal of Economy and Society*, 28(3), Article 3.
- Good, D., & Michel, E. (2013). Individual ambidexterity: Exploring and exploiting in dynamic contexts. *The Journal of Psychology*, 147(5), 435–453.
- Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *The Academy of Management Journal*, 50(2), 327–347.
- Hughes, M., Rigtering, J. P. C., Covin, J. G., Bouncken, R. B., & Kraus, S. (2018). Innovative behaviour, trust and perceived workplace performance. *British Journal of Management*, 29(4), 750–768.
- Khanin, D., Rosenfield, R., Mahto, R. V., & Singhal, C. (2022). Barriers to entrepreneurship: Opportunity recognition vs. opportunity pursuit. *Review of Managerial Science*, 16(4), 1147–1167.
- Kollmann, T., Hensellek, S., Stöckmann, J. M., & Peschl, A. (2020). How management teams foster the transactive memory system–entrepreneurial orientation link: A domino effect model of positive team processes. *Strategic Entrepreneurship Journal*, 14(4), 683–710.
- Kraus, S., Breier, M., Jones, P., & Hughes, M. (2019). Individual entrepreneurial orientation and intrapreneurship in the public sector. *International Entrepreneurship and Management Journal*, 15, 1247–1268.
- Kuratko, D. F., Burnell, D., Stevenson, R., Neubert, E., & Fisher, G. (2023). Enacting entrepreneurial hustle. *Business Horizons*, 66(2), 237–249.
- Li, N., Liang, J., & Crant, J. M. (2010). The role of proactive personality in job satisfaction and organizational citizenship behavior: A relational perspective. *Journal of Applied Psychology*, 95(2), 395–404.
- Lumpkin, G. T., & Pidduck, R. J. (2021). Global entrepreneurial orientation (GEO): An updated multidimensional view of EO. In A. C. Corbett, P. M. Kreiser, L. D. Marino, & W. J. Wales (Eds.), *Entrepreneurial orientation: Epistemological, theoretical, and empirical perspectives* (Vol. 22, pp. 17–67). Emerald Group Publishing Limited.
- Mai, R., Niemand, T., & Kraus, S. (2021). A tailored-fit model evaluation strategy for better decisions about structural equation models. *Technological Forecasting and Social Change*, 173, Article 121142.
- McGee, J. E., Peterson, M., Mueller, S. L., & Sequeira, J. M. (2009). Entrepreneurial self-efficacy: Refining the measure. *Entrepreneurship Theory and Practice*, 33(4), 965–988.
- Michaelis, T. L., Scheaf, D. J., Carr, J. C., & Pollack, J. M. (2022). An agentic perspective of resourcefulness: Self-reliant and joint resourcefulness behaviors within the entrepreneurship process. *Journal of Business Venturing*, 37(1), Article 106083.
- Miner, A. S. (1987). Idiosyncratic jobs in formalized organizations. *Administrative Science Quarterly*, 32(3), 327–351.
- Miron, E., Erez, M., & Naveh, E. (2004). Do personal characteristics and cultural values that promote innovation, quality, and efficiency compete or complement each other? *Journal of Organizational Behavior*, 25(2), 175–199.
- Mustafa, M., Gavin, F., & Hughes, M. (2018). Contextual determinants of employee entrepreneurial behavior in support of corporate entrepreneurship: A systematic review and research agenda. *Journal of Enterprising Culture*, 26(3), 285–326.
- Mustafa, M., Martin, L., & Hughes, M. (2016). Psychological ownership, job satisfaction, and middle manager entrepreneurial behavior. *Journal of Leadership & Organizational Studies*, 23(3), 272–287.
- Niemand, T., & Mai, R. (2018). Flexible cutoff values for fit indices in the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 46(6), 1148–1172.
- Paulhus, D. L., Robins, R. W., Trzesniewski, K. H., & Tracy, J. L. (2004). Two replicable suppressor situations in personality research. *Multivariate Behavioral Research*, 39(2), 301–326.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Rigtering, J. P. C., Weitzel, G. U., & Muehlfeld, K. (2019). Increasing quantity without compromising quality: How managerial framing affects intrapreneurship. *Journal of Business Venturing*, 34(2), 224–241.
- Rigtering, J. P. C., & Weitzel, U. (2013). Work context and employee behaviour as antecedents for intrapreneurship. *International Entrepreneurship and Management Journal*, 9(3), 337–360.
- Ritala, P., Baiyere, A., Hughes, M., & Kraus, S. (2021). Digital strategy implementation: The role of individual entrepreneurial orientation and relational capital. *Technological Forecasting and Social Change*, 171, Article 120961.
- Rönkkö, M., & Cho, E. (2022). An updated guideline for assessing discriminant validity. *Organizational Research Methods*, 25(1), 6–14.
- Salmoney, F. U., & Kanbach, D. K. (2022). Personality trait differences across types of entrepreneurs: A systematic literature review. *Review of Managerial Science*, 16(3), 713–749.

- Shalley, C. E., & Zhou, J. (2008). Organizational creativity in historical context. In J. Zhou, & C. E. Shalley (Eds.), *Handbook of organizational creativity* (pp. 3–31). Lawrence Erlbaum Associates.
- Shue, H. B., Lent, R. W., Miller, M. J., Penn, L. T., Gusick, M. E., & Truong, N. N. (2018). Sources of self-efficacy and outcome expectations in science, technology, engineering, and mathematics domains: A meta-analysis. *Journal of Vocational Behavior*, *109*, 118–136.
- Soltanifar, M., Hughes, M., O'Connor, G., Covin, J. G., & Roijakkers, N. (2023). Unlocking the potential of non-managerial employees in corporate entrepreneurship: A systematic review and research agenda. *International Journal of Entrepreneurial Behavior & Research*, *29*(11), 206–240.
- Sonnentag, S., Volmer, J., & Spychala, A. (2008). Job performance. In J. Barling & C. L. Cooper (Eds.), *The SAGE handbook of organizational behavior: Vol. 1 Micro approaches* (pp. 427–448). Sage.
- Van Dyne, L., Cummings, L. L., & Parks, J. M. (1995). Extra-role behaviors: In pursuit of construct and definitional clarity (a bridge over muddied waters). In L. L. Cummings, & B. M. Staws (Eds.), *Research in organizational behavior* (Vol. 17, pp. 215–285). JAI Press.
- Wales, W. J., Covin, J. G., & Monsen, E. (2020). Entrepreneurial orientation: The necessity of a multilevel conceptualization. *Strategic Entrepreneurship Journal*, *14*(4), 639–660.
- Wales, W. J., Kraus, S., Filser, M., Stöckmann, C., & Covin, J. G. (2021). The status quo of research on entrepreneurial orientation: Conversational landmarks and theoretical scaffolding. *Journal of Business Research*, *128*, 564–577.
- Wales, W. J., Monsen, E., & McKelvie, A. (2011). The organizational pervasiveness of entrepreneurial orientation. *Entrepreneurship Theory and Practice*, *35*(5), 895–923.
- Wiklund, J., & Shepherd, D. A. (2011). Where to from here? EO-as-experimentation, failure, and distribution of outcomes. *Entrepreneurship Theory and Practice*, *35*(5), 925–946.
- Zinbarg, R. E., Revelle, W., Yovel, I., & Li, W. (2005). Cronbach's α , Revelle's β , and McDonald's ω H: Their relations with each other and two alternative conceptualizations of reliability. *Psychometrika*, *70*(1), 123–133.
- Coen Rigtering** works as an Assistant Professor in Strategy and Organization at the Utrecht University School of Economics (U.S.E.). He holds Master degree (cum laude) in Policy, Communication and Organization from the VU University in Amsterdam and a Ph. D. in Corporate Entrepreneurship from the Utrecht University. His primary research interests are in the field of corporate entrepreneurship, organizational behavior, and strategic management. His work is published in several academic journals such as: *Journal of Business Venturing*, *Academy of Management Discoveries*, *British Journal of Management*, *Journal of Business Research*, and *Review of Managerial Science*.
- Thomas Niemand** is Professor of Management and Digital Transformation at Clausthal University of Technology. He holds a doctorate in Business Administration from Dresden University of Technology. His research focuses on advances in market research and the interplay of entrepreneurship, marketing and innovation management. His research appeared in journals such as the *Journal of the Academy of Marketing Science*, *Journal of Product Innovation Management*, *Journal of Cleaner Production*, *Journal of Interactive Marketing*, and *Journal of Business Research*.
- Vinh Phan** is a Ph.D. student at the Erasmus University Rotterdam, School of Economics. He holds a Research Master degree in Economics at the University of Amsterdam and the Tinbergen Institute. His primary research areas are entrepreneurship, health, and development economics. He is interested in understanding entrepreneurship and risky health behaviors in the context of developing economies. He also does research within behavioral economics with a focus on the dynamics of subjective beliefs and ambiguity.
- Jason Gawke** works as an Assistant Professor in Strategy and Organization at the Utrecht University School of Economics (U.S.E.). He holds Master degree in Industrial and Organizational Psychology from the Erasmus University of Rotterdam and a Ph.D. in Intrapreneurship from the Erasmus University of Rotterdam. His primary research interests are in the field of behavioral economics, intrapreneurship, and organizational psychology. His work is published in several academic journals such as: *Journal of Vocational Behavior*, *European Journal of Management*, and *Journal of Occupational Health Psychology*.