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Entrepreneurial play as a resource for well-being among entrepreneurs

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Abstract

Purpose – In the current paper, we focus on the play behaviour of entrepreneurs, which we refer to as "entrepreneurial play". We distinguish between two forms of entrepreneurial play – diversionary and serious play – and investigate their relationships with outcomes of well-being (psychological well-being and work satisfaction) and ill-being (work stress and burnout).

Design/methodology/approach – Drawing on conservation of resources (COR) theory, we conceptualise entrepreneurial play – both serious and diversionary – as work-embedded personal resources that foster well-being. We use data from entrepreneurs who run small businesses.

Findings – Our results reveal that serious play is associated with higher levels of well-being and lower levels of ill-being, whereas diversionary play is only associated with higher levels of work satisfaction.

Practical implications – These results challenge assumptions about the universal benefits of detachment from work and underscore the need for occupation-specific models of well-being. This study also advances the understanding of play as a strategic behavioural resource in entrepreneurship, with implications for sustaining mental health in entrepreneurial ecosystems.

Originality/value – Our study contributes to the burgeoning literature on entrepreneurs' health and well-being by identifying entrepreneurial play as a potential antecedent to entrepreneurs' sense of well-being. Also, our work contributes to COR theory by identifying a new work-embedded personal resource – entrepreneurial play (diversionary and serious play) – which can lead to gain spirals that foster well-being.

Keywords Entrepreneurship, Well-being, Play

Paper type Research article

1. Introduction

Donald Roy's ethnographic work – *Banana Time: Job satisfaction and informal interaction* (1959) – was perhaps the first study that showed how workers play in organisations (albeit surreptitiously, hidden from the managers), and the far-reaching consequences of play for

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workers' well-being, morale, and job satisfaction. Recent years have witnessed growing scholarly interest in play as a psychological and behavioural phenomenon relevant to work contexts (Mainemelis and Ronson, 2006; Hunter *et al.*, 2010; Mukerjee and Metiu, 2022). This has been largely provoked by the upsurge of play in work organisations, especially amongst creative professionals who openly play at work (Kuntze and Matulich, 2010). In fact, some organisations have even started institutionalizing play, touting it to improve employees' creativity, well-being and work performance. However, while organisational studies have begun examining play among employees, the entrepreneurial literature has paid scant attention to how entrepreneurs themselves engage in play—and how this may influence their own well-being. This is a significant omission because the entrepreneurial context differs meaningfully from employee work situations in terms of stressors, identity, and work-life integration (Stephan, 2018; Torrès and Thurik, 2019).

Entrepreneurs navigate unique challenges characterized by intense demands, personal investment, and blurred boundaries between work and personal life. These unique conditions expose them to heightened risks of stress, burnout, and emotional exhaustion, yet simultaneously offer opportunities for profound fulfilment and meaning derived from their ventures (Stephan *et al.*, 2023). Because entrepreneurs often intertwine their identity and sense of purpose with their businesses (Torrès *et al.*, 2022a, b), exploring how they engage personally in play—and the role such play may have in sustaining their well-being—is both a timely and significant research endeavour.

In the current study we therefore shift the lens from organisational play as experienced by workers/employees (Mukerjee *et al.*, 2023) to *entrepreneurial play*—defined as entrepreneurs' own engagement in play behaviours at work. To do so, we develop new play scales (see Appendix 1 of the present paper) for measuring play behaviour of entrepreneurs. Like Mukerjee *et al.* (2023) did for organisational play, we distinguish two forms of entrepreneurial play: *diversionary play*, which involves engaging in enjoyable, non-work-related activities that offer temporary respite (Mainemelis and Ronson, 2006; Mukerjee and Metiu, 2022) and *serious play*, which entails playfully approaching work tasks and work-related challenges (Schrage, 2013). We examine how each form of entrepreneurial play relates to both positive well-being and negative well-being (or ill-being) among entrepreneurs.

We conceptualize well-being as optimal psychological functioning and experience (Ryan and Deci, 2001). Mindful of the fact that well-being is a continuum, sliding from positive well-being to negative well-being/ill-being (WHO, 1998), we use two measures of both positive well-being and of ill-being. For positive well-being we use a multidimensional measure of eudaimonic well-being (Ryff, 1989), along with work satisfaction. We also use two measures for ill-being, namely work stress and burnout. Thus, our study responds to the recent call in the literature to acknowledge the complexity of the phenomenon of well-being in entrepreneurship (Stephan, 2018; Stephan *et al.*, 2023). Using a data set of French small business owners ($N = 260$), we use linear regressions in a setting with several controls.

In order to better understand the relationship between the two types of play and well-being, we use the lens of Conservation of Resources (COR) theory (Hobfoll, 1988) and conceptualize entrepreneurial play as a new *work-embedded personal resource*. Our findings from French small business owners reveal that serious play is associated with higher levels of well-being and lower levels of ill-being, whereas diversionary play is beneficial primarily for work satisfaction. This suggests important theoretical distinctions in how different types of play operate as resources for entrepreneurs.

Our study contributes to the entrepreneurship literature in several ways. *First*, our study contributes to the burgeoning literature on entrepreneurs' health and well-being (Stephan, 2018; Torrès and Thurik, 2019; Wiklund *et al.*, 2019) by identifying entrepreneurial play as a potential antecedent to entrepreneurs' sense of well-being. *Second*, our conceptualization of well-being responds to the recent call in the entrepreneurship literature for a more meaningful and broader conceptualization of well-being for entrepreneurs, since, unlike employees, entrepreneurs often experience both higher well-being and higher stressors (Grant *et al.*, 2007;

Stephan *et al.*, 2023; Torrès and Thurik, 2019; Wiklund *et al.*, 2019). Acknowledging the complexity of the phenomenon of entrepreneurial well-being, our study includes both hedonic and eudaimonic measures of well-being, as well as measures of ill-being.

We also contribute to the literature on play in work organisations (Mainemelis and Ronson, 2006; Statler *et al.*, 2009; Sørensen and Spoelstra, 2011; Vesa *et al.*, 2017; Mukerjee and Metiu, 2022; Petelczyc *et al.*, 2018). The current study focuses on entrepreneurs who run small businesses and uses newly developed scales to measure entrepreneurial play behaviour and its role in their well-being. By doing so, our work highlights practical avenues for entrepreneurs to strategically engage in play as a means to sustain their mental health. While Donald Roy's (1959) seminal ethnographic work showed that play improves employees' well-being and job satisfaction, almost 7 decades later ours is the first systematic empirical study to demonstrate the relationship between play at work and well-being, but for entrepreneurs.

Finally, our work contributes to COR theory by identifying a new work-embedded personal resource – entrepreneurial play (diversionary and serious play) – which can lead to gain spirals that foster well-being. Moreover, given that entrepreneurs are often the cultural architects of their organisation, play, when practiced by them, also has the potential to become a shared organisational resource, over time.

2. Theory and hypotheses development

The following section is organized as follows. First, we introduce the main premises of the Conservation of Resources (COR) theory. Then, we explain our motivation to focus on entrepreneurs who run small businesses. Finally, we discuss entrepreneurial well-being, play at work and its relation to well-being, and develop our hypotheses using the theoretical lens of the COR theory.

2.1 Conservation of Resources theory (COR)

Conservation of Resources (COR) theory, a stress and motivational theory, has been widely used in organisational studies to explain phenomena such as burnout, work-family conflict, organisational commitment, organisational support to name a few (Halbesleben, 2006; Demerouti *et al.*, 2000; Hobfoll *et al.*, 1990; Grandey and Cropanzano, 1999; Mohd Shuhaimi and Marzuki, 2015). COR theory's main tenet is that individuals "strive to obtain, retain, foster, and protect those things they centrally value" (Hobfoll *et al.*, 2018, p. 106), referred to as resources. Resources can be items, skills, conditions, psychological states, personal traits, or energies that individuals value.

COR defines stress as a reaction/response to the environment when there is a threat of resource loss, a real resource loss, or a lack of resource gain (Hobfoll, 1988). The theory explains that when individuals invest in resources, such as positive emotions or cognitive engagement, they can initiate "gain spirals" that protect against stress and foster well-being (Hobfoll, 1988, 2001). The COR theory also posits that in the absence of stressors, individuals build up resource surpluses – a "resource reservoir" – which they can use to enhance resource gain and to reduce resource loss in the future (Hobfoll and Shirom, 1993). The resource loss or gain does not happen in isolation. Rather, an initial resource loss or gain makes one susceptible to further losses or gains (Hobfoll, 1988). These patterns of loss and gain are referred to as loss spirals and gain spirals, respectively (Hobfoll, 2001). Because resource loss is more impactful than resource gain, loss spirals tend to be stronger and faster than gain spirals (Hobfoll, 2001).

COR theory is particularly relevant in entrepreneurship because entrepreneurial work is characterized by continual demands to acquire, protect, and invest resources. Entrepreneurs often view the survival and success of their ventures as salient to their identity, which can be problematic given that entrepreneurial ventures are inherently vulnerable in their attempts to secure resources and gain legitimacy in uncertain markets (Williamson *et al.*, 2021). This constant need to secure resources – financial, social, and emotional – for the venture can

increase stress (Hobfoll, 1988; Meijman and Mulder, 2013). According to the COR theory, resource loss is more psychologically impactful than resource gain; thus, entrepreneurs may be especially susceptible to loss spirals when facing setbacks related to their ventures' survival and success (Hobfoll, 2001).

On the other hand, entrepreneurship also offers opportunities for resource gain through autonomy, learning, and personal growth, which can potentially lead to gain spirals that reinforce well-being (Wach *et al.*, 2021; Obschonka *et al.*, 2023). Applying COR theory thus provides a valuable lens for understanding how entrepreneurs navigate the dual threats of resource depletion and opportunities for resource accumulation. Hence, identifying resources – personal or work-related – is crucial for understanding how entrepreneurial well-being can be sustained against the backdrop of such a uniquely different and demanding occupational context.

In the present study, we conceptualize entrepreneurial play — encompassing both diversionary and serious play at work — as a *work-embedded personal resource* within the COR framework. We use this term because play is enacted voluntarily by entrepreneurs and embedded into their work routines. We argue that play as a resource can improve well-being through affective and cognitive renewal and replenishment, and make work more meaningful and engaging.

2.2 Why do we focus on entrepreneurs with small businesses?

Although both salaried workers and independent workers (the self-employed) can engage in entrepreneurial activities (Wennekers and Thurik, 1999), in the current paper, we focus on those who own small businesses with up to 250 employees (61% of our sample are entrepreneurs having up to 10 employees, 28% have between 11 and 50 employees, while 11% have between 51 and 250 employees) [1].

These entrepreneurs represent a unique and important subset of the entrepreneurial population whose well-being merits dedicated attention. First, they differ significantly from salaried employees in terms of autonomy, risk-bearing, and the emotional and cognitive demands of their work. They also differ from solo self-employed individuals due to the added responsibility of managing employees and navigating team dynamics (Torrès *et al.*, 2022a, b). Their work life is marked by complex, often contradictory pressures: high job demands, long hours, and elevated risk, coupled with comparatively limited support systems and institutional protections (Leung *et al.*, 2020).

Research shows that these entrepreneurs report higher levels of stress compared to employees (Lechat and Torres, 2017), and while stress can fuel short-term income growth (Cardon and Patel, 2015), it also leads to detrimental long-term health outcomes. Block *et al.* (2022), drawing on a sample of over 47,000 European workers, found that entrepreneurs experience more flexibility but also more stress, longer hours, and less recovery time. Fors Connolly *et al.* (2021) further demonstrate that occupational context matters greatly in shaping well-being, and entrepreneurs' well-being is deeply tied to their evolving relationship with autonomy, identity, and resilience over time.

Entrepreneurs running small businesses often derive deep meaning from their ventures, seeing their businesses as extensions of the self. This identity fusion can act as both a buffer and a burden—work becomes a source of purpose but also of chronic strain (Stephan *et al.*, 2023; Torrès *et al.*, 2022a, b). They may experience high autonomy, yet they are also vulnerable to burnout due to intense workloads and role overload (Kiefl *et al.*, 2024). Importantly, when these entrepreneurs suffer from low well-being, the consequences ripple outward: productivity drops, innovation slows, persistence wanes, and the broader local economy suffers (Stephan *et al.*, 2023; OECD, 2023).

Given that small businesses are critical contributors to employment and innovation in modern economies, safeguarding the well-being of those who lead them is not just a personal or organisational concern—it is a societal imperative. Understanding how work-embedded

behaviours, such as entrepreneurial play, can support or endanger the well-being of these entrepreneurs is, therefore, both timely and essential.

2.3 Entrepreneurial well-being

Promoting well-being among people of all ages and professions has become a global concern in recent years. This concern has not evaded entrepreneurship scholarship, which is paying more and more attention to entrepreneurial well-being (Stephan, 2018; Torrès and Thurik, 2019; Wiklund *et al.*, 2019). Scholars have started to investigate how entrepreneurial well-being can be enhanced. For example, Williamson *et al*. (2021) emphasise recovery interventions, structured around the "3 Rs": respite (rest), reappraisal (reevaluation), and regimen (routine). These strategies include structured breaks, meditation, and physical exercise, enabling entrepreneurs to recharge their mental and physical resources. Similarly, Wach *et al.* (2021) highlight the importance of psychological detachment and emotional recovery to mitigate the negative effects of entrepreneurial stress, demonstrating that activities like quality sleep significantly enhance well-being.

Complementing these insights, Ryff (2019) adopted a eudaimonic perspective and identified five dimensions to foster sustainable well-being: autonomy, which helps one set independent goals; environmental mastery, which enables the management of complex challenges; personal growth, which emphasizes continuous development; positive relationships, a crucial factor for building supportive networks; and purpose in life, a cornerstone for overcoming entrepreneurial obstacles with resilience.

A study by Drnovšek *et al.* (2010) sheds light on two key stress management strategies for entrepreneurs: problem-focused and emotion-focused coping. Using data from 469 entrepreneurs, this study shows that problem-focused coping—actively identifying and solving challenges—is particularly effective in improving both personal well-being and business performance. In contrast, emotion-focused coping, while useful in less controllable situations, is less strongly associated with positive performance outcomes. This study also stressed the importance of tailoring coping strategies to the specific contexts of entrepreneurs and training them in tools to better manage the inherent tensions of their roles. Thus, it seems that enhancing entrepreneurial well-being requires concrete, context-sensitive strategies that address psychological, social, and organisational dimensions.

That said, while entrepreneurship has been considered to be "uniquely stressful" (Williamson *et al*., 2021), being an entrepreneur can also be personally and professionally enriching and rewarding. This intrinsic paradox in entrepreneurship has provoked recent research to conjecture that the entrepreneurship and well-being relationship is multi-faceted and complex, and that it matters how well-being and its components are conceptualized (Stephan *et al*., 2023; Torrès and Thurik, 2019; Wiklund *et al*., 2019).

Different subfields of psychology have provided different frameworks of what constitutes well-being (Maslow, 1971; Rogers, 1961; see Ryff, 1989). The most common framework differentiates between two types: hedonic and eudaimonic (Ryan and Deci, 2001). Hedonic well-being can be defined as "what makes experiences and life pleasant and unpleasant" (Kahneman *et al.*, 1999, p. ix); it is usually assessed using three components: high positive affect, low negative affect, and life satisfaction. Eudaimonic well-being refers to living life according to one's true self (Waterman, 1993), i.e. the degree to which a person feels alive and energetic. It leads to the experience of being fully functioning and self-realized, that is, having a sense of meaning, vitality, and authenticity (Ryan and Deci, 2001; Peterson *et al*., 2004; Ryan and Frederick, 1997). According to Waterman (1993) eudaimonia occurs when one's life is congruent with one's values, making the person fully engaged with it (Ryan and Deci, 2001).

In the entrepreneurship discipline, research has primarily focussed on hedonic well-being of entrepreneurs, i.e. their experience of life and work satisfaction, and affect (positive versus negative). Given the importance of work in the lives of entrepreneurs, work satisfaction has been shown to be closely related to life satisfaction (Stephan, 2018; Loewe *et al*., 2015). Studies

have found that entrepreneurs experience high levels of life/work satisfaction and positive affect (Blanchflower, 2000; Binder and Coad, 2016; Baron *et al.*, 2012). This has often been primarily attributed to the high work autonomy that entrepreneurs enjoy (Stephan, 2018).

However, hedonic well-being provides a narrow and short-term view of psychological functioning. Well-being also encompasses more enduring life challenges such as self-realisation, maintaining satisfying relations with others, and having a sense of purpose and meaning in life. Recent research has pointed out the limitation of focusing only on hedonic well-being as it does not take into account the unique opportunity to engage in intrinsically motivating work that is meaningful and vitalising to the individual which entrepreneurship provides (Wiklund *et al.*, 2019; Stephan *et al.*, 2023).

In the current study, to obtain a complete and balanced view of entrepreneurial well-being, we broaden our conceptualisation of well-being, thereby including both hedonic well-being (as measured by work satisfaction), and eudaimonic well-being (as measured by psychological well-being (Ryff, 1989)). Hence, we stay close to the characterization of well-being as *optimal psychological functioning and experience* (Ryan and Deci, 2001). Our conceptualisation of eudaimonic well-being (Ryff, 1989, 2019) encompasses six distinct components: sense of self-acceptance (a positive evaluation of one's current and past self), positive relation with others (such as empathy and the quality of interpersonal relations), autonomy (self-determination, independence), environmental mastery (the capacity to manage one's life and the surrounding environment), purpose in life (the belief that one's life has meaning and purpose), and personal growth (the need to actualise and realize one's potential).

The understanding of well-being also benefits from the understanding of negative well-being or ill-being. Both well-being and ill-being are important to consider, given that the entrepreneurial journey is marked by higher levels of both well-being and stressors (Grant *et al.*, 2007; Torrès and Thurik, 2019; Stephan *et al.*, 2023). In the current study, mindful of this complexity and the interplay of positive well-being and ill-being common in the entrepreneurial journey (Stephan *et al.*, 2023), we include a key ill-being concept: *work stress*. Given that work stress over time can lead to burnout, i.e. a collapse of well-being resulting from an imbalance between environmental demands and existing resources (Wei *et al.*, 2015), we also include *burnout* as a measure of ill-being. From the perspective of COR theory, burnout represents a depletion of emotional or mental resources caused by persistent job stress.

According to the COR theory, well-being is universally valued (Hobfoll, 2001) and individuals strive to protect and foster it. In the event of stress, when there is a threat or actual loss of well-being, individuals attempt to replenish or enhance their resource stock. Based on the COR theory, one could argue that entrepreneurs with higher well-being are capable of drawing on more cognitive and affective resources in order to work on their business.

In the entrepreneurship literature, a variety of factors have been attributed to positively influence entrepreneurial well-being: entrepreneurs' personality, their human capital resources (for example, stress management skills), their values and motivations, sense of autonomy, flexibility in work life, business climate, market competition, access to social support, to name a few (see Stephan, 2018 for a detailed review). These various antecedents to entrepreneurial well-being can be seen as resources – either personal, related to work characteristics, or environmental (Hobfoll, 1988). In the current paper, we contend that play at work can be such a resource, that directly affects entrepreneurial well-being.

2.4 Play at work and well-being

The need to play is fundamental and ubiquitous across the animal species; play provides learning experiences through which young animals develop complex and varied patterns of social interaction and habits for engaging in frequent social exchanges (Baldwin and Baldwin, 1973). Play in animals also improves their cognitive and motor skills (Burgdorf *et al.*, 2006). A recent study examining bumble bees as they playfully rolled on inedible coloured balls repeatedly (Dona *et al.*, 2022) demonstrates the hedonic value of play, even for insects.

Although play has historically been a topic of research in psychology, anthropology and sociology (Erikson, 1963; Freud, 1959; Piaget, 1962; Vygotsky, 1977; Huizinga, 2014; Bateson, 1972), its exploration within the field of management began relatively late (Roy, 1959), largely due to the prevailing belief that play and work are fundamentally opposing and incompatible domains. Moreover, early work in industrial relations documented "play" as covert worker misbehaviour used to regain autonomy under managerial control. In recent decades, however, as several highly successful organisations—with Google Corporation as the archetype— have attributed their performance to integrating play and fun into their work practices, management scholars have shown renewed interest in this topic (Mainemelis and Ronson, 2006; Nemeth, 1997). Play has been argued to relieve work-induced fatigue and monotony, elevate mood, and enhance creativity through both cognitive and affective mechanisms (Amabile, 1996; Isen *et al.*, 1987; Glynn, 1994; for a review see Mainemelis and Ronson, 2006).

Understanding the role of play at work is also informed by related literatures on informal relationships and humour at work. For instance, research has shown the importance of informal relationships at work for cooperation and creativity (Hargadon and Bechky, 2006), the role of celebrations in enhancing social relationships with colleagues (Dumas *et al.*, 2013), the role of humour in task accomplishment under stress (Abel and Maxwell, 2002) and the improvement of interpersonal relationship with colleagues (Filipowicz, 2002). Such studies suggest that play and fun activities are common in work organisations and have important roles in creating and enhancing interpersonal relationship between workers, which in turn affect collaborative work, organisational climate and personal well-being.

A key conceptual advance has been the differentiation of play into distinct types. *Diversionary play*, consisting of engaging in non-work activities, that is enjoyable and provides respite and breaks from work, has been set apart from *serious play*, which involves playing with work tasks (or playfully working) to generate innovative ideas/solutions and improved work output (Mainemelis and Ronson, 2006; Statler and Oliver, 2008; Schrage, 2013; Mukerjee and Metiu, 2022).

Diversionary play in the form of humour, playful interactions between employees, and celebrations (Roy, 1959; Filipowicz, 2002; Dumas *et al.*, 2013) is not uncommon in organisations. *Serious play* in the form of prototyping, hackathons, gamification, etc., to improve workers' productivity is also on the rise, especially in innovative work settings (Schrage, 2013). With the emergence of gaming culture, many modern organizations have adopted gamification practices, typically implemented as mandatory, manager-directed games and play designed to increase employee productivity (Mollick and Rothbard, 2014).

Although the role of play in entrepreneurial contexts remains underexplored (with few exceptions such as Mukerjee and Metiu, 2022), to our knowledge, empirical research has not yet investigated the impact of entrepreneurs' own play behaviour on their well-being. Hence, drawing on the existing theoretical and empirical work in organisational studies, we contend that diversionary play can be conceptualized as a work-embedded personal resource that can positively affect entrepreneurs' well-being and negatively affects their ill-being. We argue that diversionary play has the potential to provide much needed respite from the long and focused hours of work in which entrepreneurs often engage. Diversionary play can allow for recovery from work-related stressors (Meijman and Mulder, 2013), thus providing cognitive restoration (Sonnentag *et al.*, 2022) which can enhance well-being. Play as diversion (i.e. a recreation at work) can also foster vitality (Reis *et al.*, 2000), which in turn can positively influence entrepreneurs' psychological and emotional well-being. The enjoyment experienced from diversionary play would generate positive affect which could reduce stress intrinsic to the working life of most entrepreneurs. The relationship-building and social bonding that ensues when engaging in diversionary play with others are also likely to positively impact work processes and the organisational climate, which in turn can enhance well-being.

Entrepreneurs often work longer hours, are fully invested in their ventures, and carry a great amount of accountability (Benz and Frey, 2008). With their "skin in the game," they often struggle to disengage from work, which may lead to chronic stress and emotional exhaustion,

heightening the risk of burnout (Hobfoll *et al.*, 2018). Since diversionary play entails disengaging from work tasks, we argue that, viewed through the lens of Conservation of Resources (COR) theory, it acts as a work-embedded personal resource that can revive and restore energy. Engaging in enjoyable non-work activity also generates positive affect which bolsters replenishment of emotional and cognitive resources depleted by stressors (Meijman and Mulder, 2013; Sonnentag *et al.*, 2022). Thus, diversionary play can foster well-being and reduce stress and the risk of burnout in entrepreneurs.

Accordingly, we hypothesize that:

H1. Diversionary play is positively associated with (measures of) entrepreneurs' well-being.

H2. Diversionary play is negatively associated with (measures of) entrepreneurs' ill-being.

Similarly, we argue that serious play – i.e. playing with work or playfully working – would also have a positive impact on entrepreneurs' well-being. Reframing a work situation as fun or play would make it enjoyable (Barnett, 2007), thus increasing intrinsic motivation (Mainemelis and Ronson, 2006); this would positively impact creativity, innovativeness and work performance, which would feed into entrepreneurs' sense of well-being. Playfully working would also makes the work activities more engaging and meaningful (Bakker *et al.*, 2020), thus promoting well-being.

Entrepreneurs experience considerable unpredictability and ambiguity in running their businesses. Their work often demands switching between tasks, solving complex problems under time constraints, coping with conflicts with customers, suppliers, or employees (Lechat and Torrès, 2017). At the same time, they often receive fewer social resources or less support compared to salaried employees (Leung *et al.*, 2020). These elements make entrepreneurs prone to high levels of stress, negative affective experience, and even stress-related mental health problems (Rauch *et al.*, 2018; Stephan, 2018; Bernoster *et al.*, 2020).

Viewed through the lens of COR theory, engaging in serious play would boost positive affect (by making work playful and fun), which would support creativity and skill development directly linked to entrepreneurs' tasks and goals. Since playfully working makes the work activities more engaging and meaningful (Bakker *et al.*, 2020), it would also foster a sense of progress and accomplishment, thereby enhancing well-being. Playful work practices also positively influence problem-solving abilities (Whitebread *et al.*, 2012), which can initiate resource gain spirals. By boosting intrinsic motivation, problem-solving, and positive affect, serious play can create gain spirals that enhance well-being and protect against ill-being (Mainemelis and Ronson, 2006; Schrage, 2013). Moreover, gains in one domain (e.g. problem-solving or creative approaches to business challenges) may also spill over into others (e.g. reduced stress, improved mental health, and greater job satisfaction).

Accordingly, we hypothesize that:

H3. Serious play is positively associated with (measures of) entrepreneurs' well-being.

H4. Serious play is negatively associated with (measures of) entrepreneurs' ill-being.

3. Data and methods

3.1 Data and measurement

Between October and December 2022, data were collected among French entrepreneurs – operationalized as owners of small businesses with at least one employee and at most 250 employees – through five different organisations in the domain of prevention and occupational health services. Responses to the survey were on a voluntary basis (with no financial rewards). In total, 575 individuals participated. After excluding partially completed or incomplete responses, 278 usable questionnaires remained for analysis. We excluded a few additional observations, namely, those corresponding to entrepreneurs without any employees (10) or with more than 250 employees (8), resulting in an estimation sample of 260 observations [2].

3.2 Entrepreneurial play

We developed new scales for *entrepreneurial play*: a 3-item scale for entrepreneurial diversionary play and a 6-item scale for entrepreneurial serious play. We provide validation of both scales of entrepreneurial play in Appendix 2. The validation exercises demonstrate sound psychometric properties for the two newly developed scales for measuring entrepreneurial play, including a satisfactory item analysis, unidimensionality, and high internal consistency.

Example items for entrepreneurial diversionary play are "*I often participate in fun conversations with my employees*" and "*I participate in fun activities with my employees to distract myself at work*". Example items for entrepreneurial serious play are "*I often adopt a way of working that makes it fun*" and "*I approach work-related problems in a playful way*". Responses to all items were given on a 7-point scale ranging from "strongly disagree" to "strongly agree". The Cronbach's alpha values are 0.78 for entrepreneurial diversionary play and 0.87 for entrepreneurial serious play.

3.3 Well-being of entrepreneurs

We measured the well-being of entrepreneurs using two measures of positive well-being—psychological well-being and work satisfaction—and two measures of ill-being—stress at work and burnout.

For positive well-being, we measured *psychological well-being* using a slightly adjusted version of the six-item scale from Culbertson *et al*. (2010), which is a shorter version of the scale developed by Ryff (1989). Respondents were asked to indicate how they currently see themselves and their professional life. Example items are "*I have satisfying and positive relationships with the people at work*" and "*I feel positive about myself and the events that happened at work*." Responses were given on a 5-point scale ranging from "strongly disagree" to "strongly agree". The Cronbach's alpha for this scale is 0.58.

We measured *work satisfaction* using the three-item Michigan Organisational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS), developed by Cammann *et al*. (1979). An example item is "*Overall, I am satisfied with my work.*" Responses were on a 5-point scale ranging from "strongly disagree" to "strongly agree". The Cronbach's alpha for this scale is 0.75.

For ill-being, we measured *stress at work* with four items (Motowidlo *et al*., 1986). Two examples of this measure are "*I feel a great deal of stress because of my job*" and "*My job is extremely stressful*." Responses were provided on a 5-point scale ranging from "strongly disagree" to "strongly agree". This 4-item scale has a Cronbach's alpha of 0.88.

We measured *burnout* with 10 items developed by Malach-Pines (2005). Respondents were asked about their feelings using the following question: "*When you think about your work overall, how often do you feel the following?*". Then, 10 dimensions were distinguished, such as being hopeless, depressed, and physically weak. Responses were provided on a 7-point scale ranging from "never" to "always". The Cronbach's alpha for this scale is 0.92.

For each of the four well-being scales, we summed the scores of the items and divided the sum by the number of items. For *psychological well-being* and *work satisfaction*, higher values relate to more positive well-being; for *burnout* and *stress at work*, a higher value is associated with more ill-being (and hence less well-being). All items underlying the well-being measures are provided in Appendix 1.

3.4 Empirical setup and control variables

We performed linear regressions with dimensions of positive well-being (psychological well-being and work satisfaction) and ill-being (stress at work and burnout) as the dependent variables. Standard errors robust to heteroskedasticity were used throughout.

We used an array of control variables in our analyses, both at the personal and at the organisational level. Personal variables – pertaining to information about the entrepreneur –

were gender (female = 1; male = 0), age, education level (no formal diploma; professional studies certificate; baccalaureate; undergraduate degree; postgraduate degree or higher; doctorate degree or higher), and the degree (percentage) of ownership of the entrepreneur in the business.

Gender differences can influence entrepreneurial well-being, since societal expectations and access to resources may differ by gender, affecting entrepreneurial experiences and outcomes (Orser *et al.*, 2006). For instance, a recent study indicates that women entrepreneurs may experience higher levels of stress due to work–family conflicts, which can adversely affect their well-being (Brieger *et al.*, 2024). We use *age* as a control because as people grow older, they often report greater personal well-being, a trend attributed to certain psychological developments over time (Charles and Carstensen, 2010). Ageing is associated with a reduced intensity of negative emotions, partly because individuals become more adept at avoiding or emotionally detaching from difficult social experiences and instead focus more on daily positive experiences. For instance, research suggests that older entrepreneurs often report lower levels of emotional exhaustion, potentially due to enhanced psychological capital and better coping mechanisms developed over time (Kibler *et al.*, 2024). *Education level* was used as a control as higher levels of education in general are associated with better health outcomes, increased life expectancy, and enhanced emotional well-being. For instance, adults with higher educational attainment tend to live healthier and longer lives compared to their less educated peers. That is, attaining a college degree has been linked to greater emotional well-being during adolescence and early adulthood (Zajacova and Lawrence, 2018). In the entrepreneurial context, education could contribute to human capital development, equipping individuals with the knowledge and skills necessary to navigate business challenges and seize opportunities. For instance, entrepreneurial education in particular has been found to positively influence entrepreneurial behaviour by enhancing psychological capital components such as self-efficacy, resilience, and optimism (Cui, 2021). Finally, a larger *ownership percentage* may reflect greater autonomy, which could be associated with higher well-being levels; conversely, it also implies greater involvement in the business, and thus higher perceived financial risk or responsibility, which may increase work-related stress and the likelihood of burnout.

At the organisation level, we included the following controls: the firm's financial situation (ranging from 1 = heavily lossmaking to 5 = highly profitable), firm age (number of years since the firm's founding), firm size (in terms of the number of employees), and sector of the firm (manufacturing; construction; trade, transport and hospitality; information and communication; finance and insurance; real estate; professional, scientific and technical activities; education and health; other [3]).

The *financial situation* of a firm can affect entrepreneurs' stress levels and overall well-being. Financial difficulties can lead to increased anxiety and reduced life satisfaction, while profitability may enhance feelings of accomplishment and security. Research has shown that entrepreneurs facing financial distress often experience lower levels of well-being (Lukes and Zouhar, 2024). The *age of a firm* reflects its stage in the business lifecycle, which can influence entrepreneurs' sense of stability and stress levels. Startups may involve higher uncertainty and workload, impacting well-being differently compared to established firms. For instance, entrepreneurs leading older firms may experience higher levels of well-being, possibly due to increased business stability and accumulated experience (Kremer and Kruse, 2024). *Firm size* as a control is relevant, as it can affect the complexity of operations, managerial responsibilities, and social dynamics within the business. Larger firms may offer more resources but also introduce additional stressors related to employee management. This can lead entrepreneurs managing larger firms to experience higher levels of stress due to increased responsibilities, which can negatively impact their emotional well-being (Fors Connolly *et al.*, 2021). Finally, the *industry sector* in which a firm operates can influence the well-being of its owner due to varying demands, stressors, and resource availability inherent to different sectors. Industry-specific factors, including regulatory environments and market dynamics,

play a crucial role in shaping entrepreneurial experiences (Boudreaux *et al.*, 2019). For instance, the gig economy may provide limited well-being advantages, as workers often face reduced autonomy due to platform control; this setup can also generate extra pressures and stress, including performance ratings from users and limited influence over algorithm-driven task assignments (Cutolo and Kenney, 2020).

Descriptive statistics for all variables are provided in Table 1. Firm age and firm size have right-skewed distributions. This is illustrated by the fact that the average firm age is 25 years, while the median age is 18 years; the average size is 21 employees, while the median size is 7 employees. Hence, in our empirical analyses we included the logarithm of both variables, that is, ln(number of years) for firm age and ln(number of employees) for firm size.

The bivariate Pearson correlations for the dependent, independent, and control variables are shown in Table 2. The variance inflation factors (VIF) are also shown, and their low values (1.61 or less) indicate no multicollinearity concerns. We detect some higher correlations, for example between diversionary and serious play (but these variables appear in different model formulations) and between the well-being measures (these are analysed in separate model specifications as well).

Table 1. Descriptive statistics

	Mean	SD	Min	Max
Dependent variables				
Psychological well-being	3.78	0.56	2	5
Work satisfaction	4.40	0.65	2	5
Stress at work	3.74	1.00	1	5
Burnout	3.19	1.34	1	7
Independent variables: entrepreneurial play				
Diversionary play	4.10	1.51	1	7
Serious play	4.68	1.22	1	7
Control variables				
Female	0.61	0.49	0	1
Age	49.15	10.27	20	80
Education				
No formal diploma	0.02	0.14	0	1
Professional studies certificate	0.09	0.29	0	1
Baccalaureate	0.14	0.35	0	1
Undergraduate degree	0.35	0.48	0	1
Postgraduate degree or higher	0.30	0.46	0	1
Doctorate degree or higher	0.10	0.30	0	1
Sector				
Manufacturing/construction	0.13	0.33	0	1
Trade, transport, hospitality	0.29	0.46	0	1
Knowledge intensive	0.12	0.32	0	1
Education and health	0.20	0.40	0	1
Other	0.26	0.44	0	1
Financial situation	3.34	0.87	1	5
Ownership %	47.65	43.69	0	100
Ln(Firm age)	2.82	0.95	0	5.02
Ln(Number of employees)	2.15	1.30	0	5.52

Note(s): SD = standard deviation. Table based on 260 observations. Knowledge intensive sectors contain information and communication + finance, insurance and real estate + professional, scientific and technical activities

Table 2. Pearson correlation table

	VIF	1	2	3	4	5	6	7	8	9	10	11
1. Psychological well-being		1.00										
2. Work satisfaction		0.56***	1.00									
3. Stress at work		−0.41***	−0.27***	1.00								
4. Burnout		−0.63***	−0.49***	0.57***	1.00							
5. Diversionary play	1.12	0.08	0.16**	−0.11*	0.00	1.00						
6. Serious play	1.11	0.20***	0.22***	−0.24***	−0.16**	0.45***	1.00					
7. Female	1.32	0.01	0.01	−0.02	0.01	0.18***	0.04	1.00				
8. Age	1.26	0.08	0.06	−0.13**	−0.12*	−0.13**	0.02	−0.18***	1.00			
9. Financial situation	1.09	0.09	−0.02	−0.02	−0.05	−0.05	−0.12**	−0.13**	−0.02	1.00		
10. Ownership %	1.61	−0.05	−0.02	0.15**	0.09	0.03	0.15**	−0.37***	0.09	0.16***	1.00	
11. Ln(Firm age)	1.41	−0.06	−0.07	0.05	0.05	−0.18***	−0.19***	0.07	0.27***	0.02	−0.25***	1.00
12. Ln(Employees)	1.56	0.00	0.04	0.03	0.01	−0.11*	−0.16**	0.17***	−0.05	0.07	−0.46***	0.38***

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. Table based on 260 observations. VIF = Variance Inflation Factor. VIF values have been retrieved with psychological well-being as the dependent variable and diversionary play as the independent variable. Diversionary play has been replaced with serious play for calculating the VIF value for serious play. The results for the education and sector dummy variables are omitted for brevity reasons (and are available from the authors)

3.5 Empirical outcomes

Table 3 shows the results corresponding to Hypotheses 1 and 2 and includes entrepreneurial diversionary play as the main independent variable. Columns 1 and 2 focus on positive well-being (psychological well-being and work satisfaction as dependent variables, respectively), whereas columns 3 and 4 deal with ill-being (stress at work and burnout as dependent variables, respectively). Table 3, and the remaining tables, show the estimated coefficients resulting from OLS regressions, together with their standard errors – robust to heteroskedasticity – between parentheses.

Table 3 reveals that entrepreneurial diversionary play is positively related to positive well-being but only significantly so for work satisfaction. That is, entrepreneurs engaging more in diversionary play have significantly higher levels of work satisfaction ($\beta = 0.072$; $p = 0.01$) than entrepreneurs engaging less in diversionary play; however, diversionary play is not significantly related to their level of psychological well-being ($\beta = 0.030$; $p = 0.23$). Thus, Hypothesis 1 is only partially supported. A one-unit increase in diversionary play is related to a (significant) increase of 0.072 in work satisfaction. Columns 3 and 4 of Table 3 show that there is no significant association between diversionary play and ill-being ($\beta = -0.070$, $p = 0.12$ for stress at work; $\beta = 0.009$, $p = 0.89$ for burnout). Hence, Hypothesis 2 is not supported.

Table 4 shows the results corresponding to Hypotheses 3 and 4 and includes entrepreneurial serious play as the main independent variable. Entrepreneurs engaging more in serious play have significantly higher levels of psychological well-being ($\beta = 0.095$; $p = 0.003$) and work satisfaction ($\beta = 0.118$; $p = 0.004$) than entrepreneurs engaging less in serious play. Hence, Hypothesis 3 is supported. Furthermore, Columns 3 and 4 reveal that entrepreneurs engaging more in serious play experience significantly less ill-being than entrepreneurs engaging less in serious play (stress at work: $\beta = -0.218$; $p < 0.001$; burnout: $\beta = -0.183$; $p = 0.02$). A one-unit increase in serious play is related to decreases of 0.218 in stress at work and 0.183 in burnout – the largest two coefficients for the play variables in Tables 3 and 4. Thus, Hypothesis 4 is supported.

Table 3. OLS results for entrepreneurial diversionary play

	Psychological well-being (1)	Work satisfaction (2)	Stress at work (3)	Burnout (4)
Entrepreneurial diversionary play	0.030	0.072**	−0.070	0.009
	(0.025)	(0.028)	(0.044)	(0.061)
Female	0.008	−0.005	0.018	0.070
	(0.076)	(0.088)	(0.130)	(0.186)
Age	0.007**	0.005	−0.018***	−0.020**
	(0.004)	(0.004)	(0.007)	(0.009)
Financial situation	0.087**	−0.007	−0.107	−0.135
	(0.041)	(0.048)	(0.074)	(0.090)
Ownership %	−0.002	−0.000	0.006***	0.005*
	(0.001)	(0.001)	(0.002)	(0.002)
Ln(Firm age)	−0.087**	−0.083**	0.156**	0.227**
	(0.043)	(0.039)	(0.079)	(0.094)
Ln(Number of employees)	0.005	0.060	0.053	0.020
	(0.031)	(0.040)	(0.054)	(0.080)
Number of observations	260	260	260	260
R-squared	0.09	0.07	0.13	0.09

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$

Model specifications also include education and sector dummies (see Table 1)

For *psychological well-being* and *work satisfaction*, higher values relate to more positive well-being; for *burnout* and *stress at work* a higher value is associated with more ill-being (and hence less well-being)

Table 4. OLS results for entrepreneurial serious play

	Psychological well-being (1)	Work satisfaction (2)	Stress at work (3)	Burnout (4)
Entrepreneurial serious play	0.095***	0.118***	−0.218***	−0.183**
	(0.032)	(0.041)	(0.052)	(0.077)
Female	0.005	0.012	0.026	0.118
	(0.074)	(0.086)	(0.125)	(0.183)
Age	0.007*	0.004	−0.016**	−0.019**
	(0.004)	(0.004)	(0.006)	(0.010)
Financial situation	0.102**	0.010	−0.143**	−0.169*
	(0.042)	(0.047)	(0.072)	(0.091)
Ownership %	−0.002*	−0.001	0.007***	0.006**
	(0.001)	(0.001)	(0.002)	(0.002)
Ln(Firm age)	−0.076*	−0.077*	0.131*	0.191**
	(0.042)	(0.041)	(0.075)	(0.094)
Ln(Number of employees)	0.006	0.057	0.053	0.013
	(0.030)	(0.038)	(0.051)	(0.080)
Number of observations	260	260	260	260
R-squared	0.12	0.09	0.19	0.12

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$
Model specifications also include education and sector dummies (see Table 1)
For *psychological well-being* and *work satisfaction*, higher values relate to more positive well-being; for *burnout* and *stress at work* a higher value is associated with more ill-being (and hence less well-being)

The results of the control variables are as follows. Gender does not show significant coefficients across the board. Generally, older entrepreneurs have significantly higher levels of well-being and lower levels of ill-being than younger ones ($p < 0.10$ in 6 out of 8 model specifications). Entrepreneurs' educational level (results not reported in Tables 3 and 4) is not significantly related to well-being. Larger ownership percentages are significantly associated with more ill-being in both tables. At the organisational level, we find some evidence that the perception of the financial situation is significantly related to well-being (significant and positive coefficients ($p < 0.10$) for psychological well-being in both tables, and significant and negative coefficients ($p < 0.10$) for ill-being in Table 4). Furthermore, we note that entrepreneurs in older businesses have significantly lower levels of positive well-being and significantly higher levels of stress at work and burnout than entrepreneurs of younger businesses ($p < 0.10$ in each model specification in Tables 3 and 4). Firm size is generally not related to well-being. Results for sector orientation (results not reported in Tables 3 and 4) do not reveal significant well-being differences across sectors.

3.6 Additional analyses

We performed three additional analyses: moderation effects, a heterogeneity analysis across our datasets, and non-linear associations.

Moderation effects. For our moderation analysis, we selected personal and firm characteristics as moderator variables that we believe may be important in accentuating or dampening the association between entrepreneurial play and well-being/ill-being. As personal characteristics, we selected gender, age, and education of the entrepreneur as moderator variables. Regarding the firm characteristics, we selected firm size as the moderator variable.

Table 5 shows the estimates of the coefficients of the interaction terms for diversionary play, while Table 6 shows the estimates for serious play. Again, columns 1 and 2 of Tables 5 and 6 focus on positive well-being (psychological well-being and work satisfaction as dependent variables, respectively), whereas columns 3 and 4 focus on ill-being (stress at work

Table 5. OLS results for entrepreneurial diversionary play; interaction terms included

	Psychological well-being (1)	Work satisfaction (2)	Stress at work (3)	Burnout (4)
Entrepreneurial diversionary play	−0.081	0.020	0.004	0.310
	(0.128)	(0.149)	(0.273)	(0.407)
Female × Diversionary play	0.083*	0.033	0.052	−0.030
	(0.050)	(0.060)	(0.097)	(0.136)
Individual age × Diversionary play	0.001	0.002	−0.002	−0.004
	(0.002)	(0.003)	(0.005)	(0.008)
Higher education × Diversionary play	0.061	−0.118**	0.012	−0.054
	(0.048)	(0.058)	(0.084)	(0.112)
Large firm × Diversionary play	−0.012	−0.035	−0.048	−0.094
	(0.049)	(0.055)	(0.090)	(0.121)
Number of observations	260	260	260	260
R-squared	0.08	0.07	0.13	0.08

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$
Education (1 = "Postgraduate degree or higher" or "Doctorate degree or higher"; 0 for the remaining education categories) and firm size (1 = at least 11 employees; 0 = at most 10 employees) have been transformed to enhance interpretation. The model specifications in columns 1, 2, 3 and 4 include education (transformed), ln (firm age), firm size (transformed), female, individual age, ownership %, financial situation, and sector dummies; these results are available upon request
For *psychological well-being* and *work satisfaction*, higher values relate to more positive well-being; for *burnout* and *stress at work* a higher value is associated with more ill-being (and hence less well-being)

Table 6. OLS results for entrepreneurial serious play; interaction terms included

	Psychological well-being (1)	Work satisfaction (2)	Stress at work (3)	Burnout (4)
Entrepreneurial serious play	−0.299*	−0.110	0.110	0.893**
	(0.164)	(0.211)	(0.265)	(0.400)
Female × Serious play	0.144**	0.205**	−0.066	−0.180
	(0.065)	(0.090)	(0.106)	(0.154)
Individual age × Serious play	0.006**	0.003	−0.007	−0.020***
	(0.003)	(0.004)	(0.005)	(0.007)
Higher education × Serious play	−0.009	−0.065	−0.075	−0.088
	(0.066)	(0.087)	(0.115)	(0.155)
Large firm × Serious play	−0.016	−0.063	0.211**	0.109
	(0.062)	(0.080)	(0.105)	(0.149)
Number of observations	260	260	260	260
R-squared	0.14	0.10	0.21	0.13

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$
Education (1 = "Postgraduate degree or higher" or "Doctorate degree or higher"; 0 for the remaining education categories) and firm size (1 = at least 11 employees; 0 = at most 10 employees) have been transformed to enhance interpretation. The model specifications in columns 1, 2, 3 and 4 also include education (transformed), ln(firm age), firm size (transformed), female, individual age, ownership %, financial situation, and sector dummies; these results are available upon request
For *psychological well-being* and *work satisfaction*, higher values relate to more positive well-being; for *burnout* and *stress at work* a higher value is associated with more ill-being (and hence less well-being)

and burnout as dependent variables, respectively). We transformed education (1 = "Postgraduate degree or higher" or "Doctorate degree or higher"; 0 for the remaining

education categories) and firm size (1 = at least 11 employees; 0 = at most 10 employees) to enhance interpretation. For age, we focus on the average age in the sample (49 years), one standard deviation below the average (39 years), and one standard deviation above the average (59 years).

We find significant coefficients of interaction terms for female (Column 1 of Table 5; Columns 1 and 2 of Table 6), age (Columns 1 and 4 of Table 6), education (Column 2 of Table 5), and firm size (Column 3 of Table 6). For these significant interaction terms ($p < 0.10$), we show the interaction plots in Figure 1. All other coefficients of interaction terms included in Tables 5 and 6 result in non-significance ($p > 0.10$) and hence these interaction plots are not shown.

Figure 1, graph a, reveals a positive relationship between diversionary play and psychological well-being among women, while we found a non-significant association for the entire sample in Table 3. Also, the positive relationships between serious play on the one hand, and psychological well-being and work satisfaction on the other hand, are found for women only (the upward dashed lines reflecting the positive relationship for women in graphs a, b, and c of Figure 1). For men, the relationships between diversionary/serious play and positive well-being are non-significant, given the (nearly) horizontal solid lines in graphs a, b, and c.

Also, graphs d and e of Figure 1 show that the positive relationship between serious play and psychological well-being, and the negative relationship between serious play and burnout, are found among older entrepreneurs, defined as the average age +1 SD (standard deviation). For younger entrepreneurs, that is, average age - 1 SD, we do not find significant relationships (the (nearly) horizontal solid lines reflecting the younger entrepreneurs in graphs d and e).

Furthermore, Figure 1, graph f, shows that the relationship between diversionary play and work satisfaction is significant and positive only for the lower educated entrepreneurs. Hence, for lower educated entrepreneurs, diversionary play is positively related to work satisfaction (the upward dashed line in graph f of Figure 1). For higher educated entrepreneurs, however, there is no significant association between diversionary play and work satisfaction (see the horizontal solid line in graph f of Figure 1).

Finally, graph g of Figure 1 shows that the negative relationship between serious play and stress at work is significantly stronger in the smallest firms, defined as having at most 10 employees (the steeper, downward solid line reflecting the smallest firms in graph g).

Heterogeneity across datasets. Next, we focus on the heterogeneity among the datasets. Note that the data were collected from a sample of French business owners through five organisations in the domain of prevention and occupational health service. Adding dummy variables representing the organisations leads to qualitatively similar results for diversionary and serious play. Importantly, the dummy variables representing the organisations do not reach joint statistical significance when added to the model specifications in Tables 3 and 4 ($p > 0.10$ for *F*-tests on joint significance in each specification). Also, we interacted diversionary and serious play with the dummy variables representing the organisations and tested for the joint significance of these interactions in every model specification. Again, these *F*-tests do not reach statistical significance ($p > 0.10$) for the specifications in Columns 1–4 of Tables 3 and 4. Taken together, we do not find evidence that our results for serious and diversionary play are driven by differences across datasets representing the organisations.

Non-linear association. Finally, we investigate the possible curvilinear nature of the relationship between play and well-being. Adding quadratic terms of diversionary and serious play to the model specifications in addition to the linear terms does not reveal any quadratic relationship between play and well-being ($p > 0.10$ for all quadratic terms in Columns 1–4 of Tables 3 and 4).

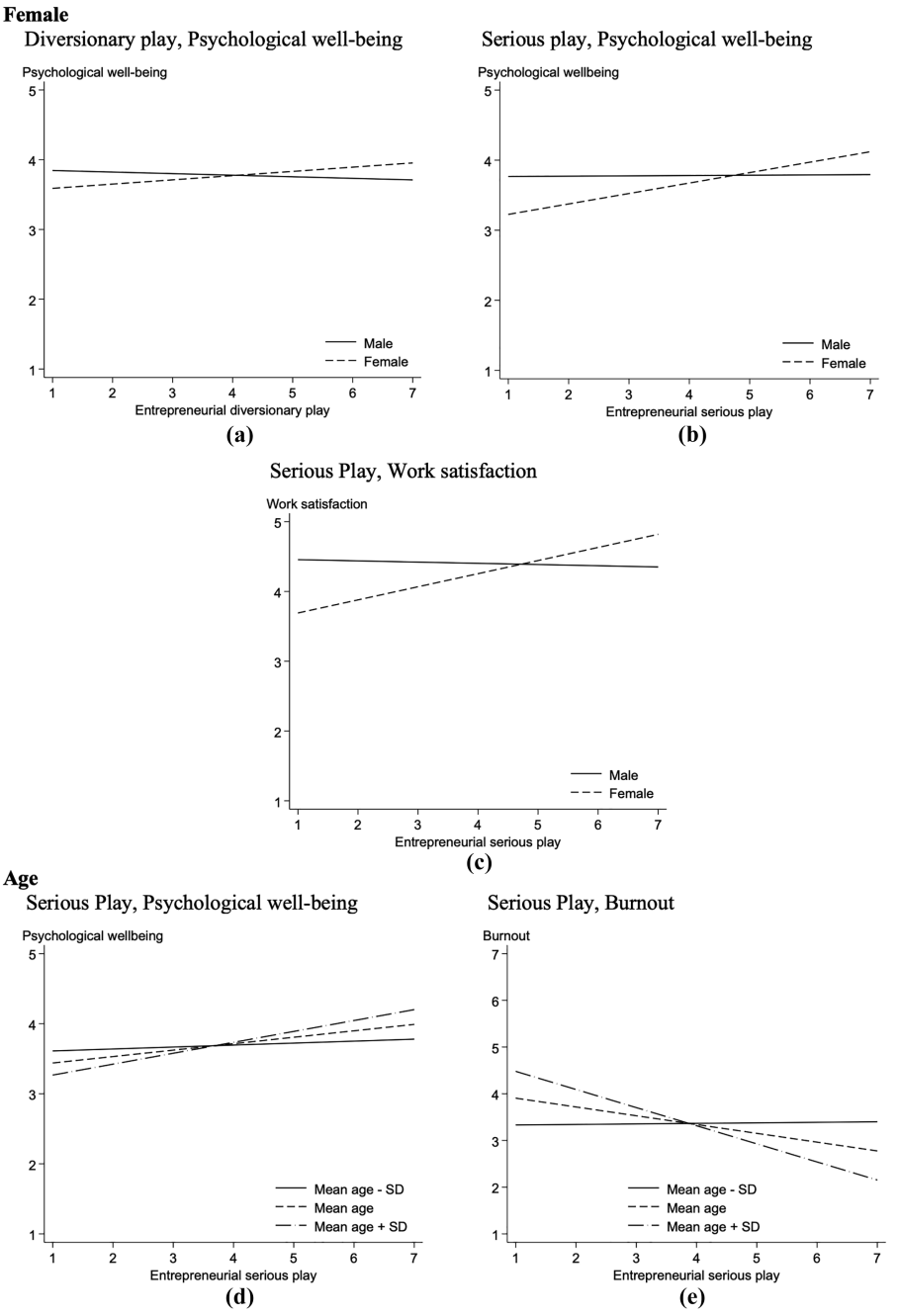
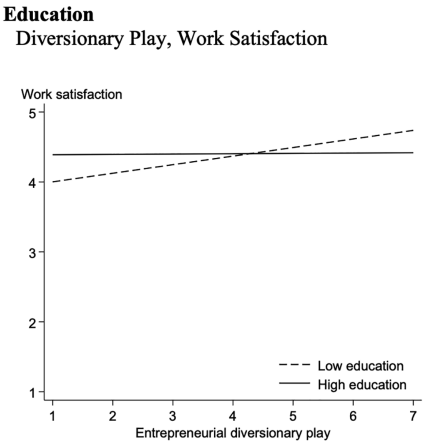


Figure 1. Interaction plots for female, individual age, education, and firm size



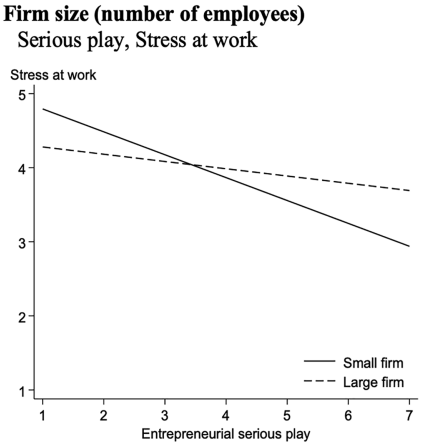


Figure 1. (*continued*)

4. Discussion

A growing body of research has examined the determinants of entrepreneurial well-being (Stephan, 2018; Stephan *et al.*, 2023; Bugaut-Heichelbech *et al.*, 2023). Yet the role of *play*—a universally enjoyable and ubiquitous phenomenon—surprisingly remains unexplored in entrepreneurial research. Addressing this gap, our study is among the first to investigate how two distinct forms of play—*diversionary* and *serious*—affect the well-being and the ill-being of entrepreneurs, and offers novel insights. Anchored in Conservation of Resources (COR) theory, we conceptualise entrepreneurial play as a *work-embedded personal resource*. Our study demonstrates that as a resource, play either replenishes depleted energies or enhances motivational engagement with work, thus serving distinct resource functions for entrepreneurial well-being.

More precisely, our findings indicate that *diversionary play* (which involves engaging in enjoyable, non-work-related activities) is positively associated with entrepreneurs' work satisfaction, yet does not significantly reduce their work stress or burnout. This finding may seem at odds with prior research which suggests that diversions from work like humour, and leisure can foster recovery, cognitive restoration, and positive affect (Elsbach and Hargadon, 2006; Mainemelis and Ronson, 2006; Sonnentag and Fritz, 2015).This leads us to contend that diversionary play primarily acts as a *restorative resource* for entrepreneurs that helps revive affect, foster micro-detachment from work demands/stressors, and allows for moments of joy, thus temporarily restoring emotional and cognitive resources (Halbesleben *et al.*, 2014). However, the restorative effect of diversionary play is bounded: since it entails stepping away from work, it does not reduce objective workload, or the chronic stressors related to work that entrepreneurs face, which may explain its limited role in mitigating ill-being among entrepreneurs. This finding also refines our understanding of the limits of hedonic resource replenishment under sustained stress and strain that entrepreneurship often entails.

We find that *serious play* (which effectively translates to playfully working) is strongly associated with higher well-being (psychological well-being, work satisfaction) and lower ill-being (work stress, burnout). This supports COR theory's principle of resource investment, where individuals use existing resources (e.g. energy, affect) to create gain spirals that generate further resources over time (Hobfoll, 2001; Halbesleben *et al.*, 2014). Serious play makes work feel more meaningful, fosters a sense of progress and accomplishment, and reinforces intrinsic motivation. Through this pathway, it may both enhance positive outcomes and protect

against depletion. Unlike diversionary play, serious play integrates *recovery* and *advancement*, making it a more sustainable well-being mechanism in high-strain entrepreneurial environments.

Together, these findings deepen our understanding of how play can function as a differentiated resource within the entrepreneurial context. Our work illustrates that not all forms of play are equally effective in promoting entrepreneurial well-being. While diversionary play offers short-term recovery benefits by facilitating replenishment, serious play integrates recovery with progress, initiating amplification through gain spirals, positioning itself as a more robust contributor to long-term well-being. This insight brings conceptual clarity to the role of play seen through the lens of COR theory, by illustrating how different forms of the same resource domain (entrepreneurial play) support well-being through distinct resource pathways.

We performed various additional analyses and investigated interaction effects using some personal characteristics of entrepreneurs and firm characteristics as moderator variables. These analyses led to some interesting results. For example, we found that the positive relationship between diversionary play and work satisfaction is significant only for entrepreneurs with lower levels of education. This result seems to be aligned to a previous study that has shown that for people with equal levels of intrinsic reward (in the form of job autonomy, task significance, and task involvement) work satisfaction tends to be considerably lower among the better-educated workers (Mottaz, 1984).

Our additional analyses highlight a gendered dimension to play's impact on well-being. For women, serious play is significantly associated with higher psychological well-being and work satisfaction, while these relationships are not significant for men. We also find a positive association between diversionary play and psychological well-being for women but not for men. This suggests that play serves as a meaningful coping mechanism for female entrepreneurs, possibly due to their higher likelihood of experiencing work-family spillover stress (Stephan, 2018). Prior research suggests that women may experience entrepreneurship differently than men, that is, there is a gender-specific perception of entrepreneurship (Koellinger *et al.*, 2013).

The positive relationship between serious play and psychological well-being, and the negative relationship between serious play and burnout, were found among older entrepreneurs. For younger entrepreneurs, we did not find significant relationships. One way to explain this result could be through the Socioemotional Selectivity Theory (SST), which indicates that as people age, they prioritize emotionally meaningful, intrinsically rewarding activities over purely instrumental pursuits (Carstensen, 1995; Carstensen *et al.*, 1999; Carstensen *et al.*, 2003). By turning core work activities into something intrinsically engaging, serious play has the potential to align more closely with older entrepreneurs' motivational priorities, making it particularly effective for elevating their well-being and dampening their stress and burnout. On the other hand, younger entrepreneurs, who more often prioritise exploration, growth, and extrinsic achievement, may not experience the same motivational resonance, which blunts the impact of their serious play on ill-being (even though it is enjoyable).

We also found that serious play is more negatively associated with ill-being in smaller firms ($\leq$10 employees) than in larger firms (>10 employees). Possibly, play dynamics in larger organisations differ due to more formalized structures and role differentiation.

Finally, we explored whether the relationship between play and well-being follows a non-linear (e.g. inverted U-shaped) pattern. Our results do not support a curvilinear relationship, indicating that higher levels of play do not reach a saturation point where the benefits diminish or reverse. This suggests that play is consistently beneficial within the observed range, contrary to common sense logic which would suggest that excessive informality or playfulness might detract from business discipline and work focus.

5. Contributions, limitations and future research

5.1 Contributions

Our study makes several important contributions. *First*, we contribute to COR theory (Hobfoll, 2001; Halbesleben *et al.*, 2014) by conceptualising entrepreneurial play as a work-embedded personal resource, that is, a resource initiated and enacted by the entrepreneur within the work context. This shifts prior conversations about external or structural support towards the entrepreneur's own behavioural agency in generating psychological resources. We show that play has differentiated resource functions: diversionary play primarily replenishes depleted emotional and cognitive energies/resources, whereas serious play serves as a resource investment that initiates gain spirals, enhancing intrinsic motivation, accomplishment, and long-term progress.

In particular, serious play may be reframing work from a predominantly obligatory, instrumental, and efficiency-driven pursuit into an engaging, intrinsically motivating process (Glynn, 1994; Sandelands, 1988). This reframing heightens job satisfaction and psychological well-being while simultaneously reducing ill-being (i.e. stress and risk of burnout). By contrast, while diversionary play is beneficial for work satisfaction, it does not appear to mitigate ill-being. This nuanced finding offers a more refined application of COR theory: the alignment between the function of a resource and the nature of the strain matters. Some resources foster positive affect and short-term restoration, while others contribute to longer-term protection from loss and cumulative resource gain. In short, our findings suggest that the type of resource, and how it is used, matters for how well-being and ill-being are shaped in entrepreneurial work.

Second, our findings challenge the assumption that psychological detachment from work is a universally effective recovery strategy. While recovery theory typically holds that stepping away from work promotes well-being (Sonnentag and Fritz, 2015; Sonnentag *et al.*, 2022), our results suggest that this may not hold true for entrepreneurs running small businesses. Specifically, diversionary play—intended to provide mental distance from work—improves work satisfaction but does not alleviate stress or reduce burnout. This points to a limitation in applying generalised recovery models to entrepreneurial contexts. A similar result was found in a study by Le Moal *et al.* (2025) which reported that among the four recovery experiences—detachment, relaxation, mastery, and control—detachment had no positive effect on the well-being of small business owners. They argued that detachment may be ineffective because entrepreneurs often have a deep personal identification with their business, making separation from work psychologically difficult. Our findings reinforce this perspective, showing that even non-work play fails to offer relief when the boundaries between self and business are blurred.

This insight contributes to a more nuanced understanding of recovery in entrepreneurship and invites a reconsideration of recovery theory's applicability across occupational groups. What supports recovery in salaried employees may not translate to entrepreneurial settings, where identity, autonomy, and responsibility are deeply intertwined.

Third, our findings encourage a more *context-sensitive approach* to studying well-being resources, highlighting that interventions or behaviours that help employees recover may be less effective for entrepreneurs whose professional and personal identities are often inextricably intertwined with their work/business (as for small business owners).

Fourth, the current paper adds to the existing body of work on organisational play by creating scales that empirically measure entrepreneurs' diversionary and serious play. While the link between play at work and well-being has been theorised in the organisational play literature (Mainemelis and Ronson, 2006), our study empirically investigates this relationship for entrepreneurs and indicates that this relationship is more nuanced in this occupational group with distinct well-being outcomes.

Fifth, and arguably most importantly, our study suggests that entrepreneurial well-being is a complex construct, as noted recently by scholars such as Stephan (2018). We contribute to this growing body of work by considering both hedonic and eudaimonic well-being, as well as the

notion of ill-being. As our findings reveal, although a resource can enhance well-being, it may not be instrumental in reducing ill-being.

Taken together, our results underscore the importance of recognising *play* as a multifaceted resource in the field of entrepreneurship. Specifically, *serious play* is a powerful and underutilised strategy to combat entrepreneurial stress and prevent risk of burnout, whereas *diversionary play* appears better suited for promoting temporary respite and job satisfaction. Using the COR theory as a framework, our work responds to recent calls to better integrate the behavioural realities of entrepreneurs into theorising on mental health and resource management.

Our findings offer *actionable/practical insights* for entrepreneurs, entrepreneurial support systems, and policymakers.

For entrepreneurs, the results of this study highlight the value of integrating play into daily work routines. Diversionary play can serve as a *micro-recovery* resource, particularly in moments of fatigue. Serious play on the other hand, fosters motivation and enhances the meaningfulness of work. Entrepreneurs should not feel guilty about play; instead, they can learn to see it as an investment in long-term energy and engagement.

For entrepreneurial ecosystems (e.g. incubators, co-working spaces, mentoring programmes), our results suggest the importance of creating environments where play is socially acceptable and structurally enabled. Offering play-infused workshops, creating flexible workspaces that support play, and modelling playful behaviours in leadership can reduce stigma around play and support healthier entrepreneurial cultures.

From a societal perspective, encouraging entrepreneurial play has implications for sustainability and mental health. Entrepreneurial burnout can have cascading consequences — including business closures, job loss, and community-level economic disruption. Supporting entrepreneurs' capacity to self-generate resources through play may be a low-cost, high-impact way to buffer these risks.

5.2 Limitations and future research

The present study has several limitations. *First*, our sample stems from French entrepreneurs with small businesses. Thus, we cannot be sure if our results would hold for entrepreneurs from other cultures. Studies that have investigated the value of resources (using the COR theory) across cultures generally indicate that, while many resources are valued universally across different cultures, there are some exceptions (Morelli and Cunningham, 2012; Pines *et al.*, 2002). Therefore, further research is needed to empirically assess whether our findings can be generalised to other cultures.

Second, we were unable to establish causal relationships between the variables because our study utilised cross-sectional data. We encourage future studies to use longitudinal data and methods to replicate our findings and to see whether any dependencies over time exist.

Third, since our study relied solely on survey data, there is a possibility of common method bias (Podsakoff *et al.*, 2003). Therefore, we suggest that future research replicate our work, using a longitudinal design to measure play and well-being at different points in time; a diary study approach could reflect changes in both phenomena over time, while also allowing for a more dynamic understanding of the relationship between entrepreneurial play and well-being.

Our study provides several avenues for future research. *First*, our work suggests the importance of disentangling different types of entrepreneurial play – diversionary and serious – rather than lumping them together. As we found, both types of play have different impacts on entrepreneurial well-being. We consider investigating the mechanisms through which both types of play affect well-being/ill-being to be a promising future avenue of research. For instance, the work of Mukerjee and Metiu (2022) shows that voluntary and intense play practices allow people to be vulnerable, create comradeship, leading to an environment of psychological safety, thus promoting innovation in organisations. In a similar vein, we consider investigating the associated pool of organisational resources that are created due to

the prevalence of diversionary and serious play (social bonds, positive impact on the work processes, organisational climate etc.) as an important future avenue.

Second, examining the role of entrepreneurial play at different stages of venture creation through a longitudinal study could also reveal its role as a resource throughout the life cycle of the enterprise.

Third, research on play in entrepreneurship could also benefit from investigating the role of entrepreneurial play on a variety of outcomes important for entrepreneurship scholarship, such as entrepreneurial creativity, productivity, or serial entrepreneurship.

Fourth, future research could explore how personal characteristics (e.g. personality traits, gender, age, education) and firm-level factors (e.g. organisational structure, firm size and age, industry, work design) shape the relationship between entrepreneurs' engagement in play and their well-being. For example, future studies could explore how gendered expectations, role strain, or socialisation influence how and why entrepreneurs turn to play. While our study examined some of these moderators, we underscore the importance of continued investigation into these contextual and individual differences.

Fifth, because entrepreneurs often serve as cultural architects within their organisations, their enactment of play has the potential to spread beyond the self. Through mechanisms such as social learning and emotional contagion, entrepreneurial play may gradually become embedded in daily organisational routines and shared norms. We encourage future research to adopt multi-level, longitudinal designs that track how entrepreneurs' play behaviours evolve over time and influence employees' play engagement, as well as the broader organisational dynamics—such as psychological safety and playful work design. Specifically, cross-level mediation models could examine the cascading effects from entrepreneurs' play to employees' play, to shifts in organisational climate, and ultimately to collective well-being or ill-being. Such work would deepen our understanding of whether entrepreneurial play remains a personal resource or gradually transforms into a shared organisational resource through role modelling and organisational routine.

6. Conclusion

The present study demonstrates that entrepreneurial play—a non-financial and previously underexplored factor in entrepreneurship research—can influence entrepreneurs' sense of well-being. By distinguishing between two forms of play—diversionary and serious play—and employing newly developed and validated scales, our study offers a refined conceptual and empirical framework for future research. Drawing on a dataset of French entrepreneurs running small businesses with employees, our study examines four distinct well-being outcomes: psychological well-being, work satisfaction, work stress, and burnout.

As research on entrepreneurial well-being continues to grow (Stephan, 2018), our findings highlight entrepreneurial play as a novel mechanism for supporting mental health in this demanding occupational context. Entrepreneurs often face blurred work-life boundaries, intense decision-making, and sustained cognitive and emotional demands. In such conditions, traditional forms of detachment may be difficult to achieve.

We find that diversionary play, which involves stepping away from work to engage in non-work playful activities, improves work satisfaction but does not significantly reduce stress or burnout. This suggests that simply disconnecting from work may not offer sufficient relief for entrepreneurs whose roles are heavily interwoven with their business. In contrast, serious play, which reframes work tasks as intrinsically motivating and playful, not only enhances well-being but also alleviates ill-being. In essence, while diversionary play lifts the mood, serious play lightens the load.

These insights invite a rethinking of how entrepreneurial work can be organised and experienced. Embedding playful elements into daily business practices may foster a more resourceful, energised, and sustainable way of working. In a field where financial metrics often dominate, our study emphasises the importance of the psychological and experiential

dimensions of entrepreneurship. Recognising play as a strategic behavioural resource—rather than a frivolous pastime—opens promising pathways for nurturing healthier entrepreneurial lives and more resilient ecosystems.

Appendix 1

Table A1. Measures of play, well-being, and ill-being

Variable names and underlying measures
Entrepreneurial diversionary play (7-point scale: "strongly disagree" to "strongly agree")
I participate in enjoyable, non-work-related activities with my employees during work hours
I often participate in fun conversations with my employees
I participate in fun activities with my employees to distract myself at work
Entrepreneurial serious play (7-point scale: "strongly disagree" to "strongly agree")
I approach work-related problems in a playful way
I approach my work in a pleasant way that absorbs me
I often adopt a way of working that makes it fun
I look for humour in what I have to do
I approach my tasks in a creative way to make them more interesting
I use my imagination to make my work more interesting
Positive well-being: Psychological well-being (5-point scale: "strongly disagree" to "strongly agree")
I feel positive about myself and the events that happened at work
I have satisfying and positive relationships with the people at work
Social pressures and the expectations of others made me act and think in certain ways at work. (R)
I had difficulty managing my daily affairs and controlling events at work. (R)
I do not have a sense of purpose and meaning in my work. (R)
My work challenged me and made me grow as a person
Positive well-being: Work satisfaction (5-point scale: "strongly disagree" to "strongly agree") – Cammann *et al.* (1979)
Overall, I don't like my job. (R)
Overall, I am satisfied with my work
Overall, I like my current job
Ill-being: Stress at work (5-point scale: "strongly disagree" to "strongly agree") – Motowidlo *et al.* (1986)
I feel a great deal of stress because of my job
Very few stressful things happen to me at work (R)
My job is extremely stressful
I almost never feel stressed at work (R)
Ill-being: Burnout (7-point scale ranging from "never" to "always") – Malach-Pines (2005)
When you think about your work overall, how often do you feel the following?
Tired
Disappointed with people
Hopeless
Trapped
Helpless
Depressed
Physically weak/Sickly
Worthless/Like a failure
Difficulties sleeping
"I've had it"

Note(s): R = reverse coded. The scores of the items are added up and divided by the number of items. For *psychological well-being* and *work satisfaction*, higher values relate to more positive well-being; for *burnout* and *stress at work* a higher value is associated with more ill-being (and hence less well-being)

Appendix 2

Validation of the entrepreneurial play scales

To validate the constructs of *entrepreneurial diversionary play* and *entrepreneurial serious play*, we conducted a series of analyses using 260 observations. The validation process includes descriptive statistics, inter-item correlations, item-total correlations, reliability, and exploratory factor analysis.

(1) Entrepreneurial diversionary play

This scale consists of three items designed to capture entrepreneurs' engagement in enjoyable, non-work-related activities with their employees during work hours. Table A2 shows descriptive statistics of the three items. Ideally, item means are close to the centre of the range of possible scores (which is 4) rather than at the extremes (1 and 7), and item variances should not differ markedly (DeVellis and Thorpe, 2021). Indeed, Table A2 shows that the item means are closer to the centre (4) than to the extremes, and that the item standard deviations are not markedly different from each other.

We also inspect inter-item correlations in Table A2. In general, the items are highly intercorrelated, ranging between 0.47 and 0.65, hence exceeding the recommended minimum of 0.30 (Boateng *et al.*, 2018). Higher correlations indicate higher item reliabilities. Table A2 also reveals high corrected item-total correlations, which indicate each item's correlation with the remaining items. Corrected item-total correlations range from 0.54 to 0.68, all well above the recommendation of 0.30 (Boateng *et al.*, 2018).

The reliability coefficient Cronbach's alpha for the scale is 0.78, indicating respectable reliability (DeVellis and Thorpe, 2021).

Focusing on dimensionality by means of exploratory factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.68, classified as acceptable for factor analysis (Kaiser, 1974). In addition, Bartlett's test of sphericity is significant ($\chi^2 = 231.8$, $p < 0.001$), supporting scale factorability. Exploratory factor analysis yields one factor, with an eigenvalue of 1.51. All three items have factor loadings above the 0.40 recommendation (Boateng *et al.*, 2018), confirming unidimensionality, see Table A3. In addition, all communalities are above 0.20 (Child, 2006). Parallel analysis (Hayton *et al.*, 2004) also supports the retention of a single factor.

Table A2. Means, SD's, inter-item correlations, and corrected item-total correlations for entrepreneurial diversionary play

Item diversionary play	Mean	SD	Item-total correl.	Inter-item correlations 1	2	3
Item 1. I participate in enjoyable, non-work-related activities with my employees during work hours	3.51	1.98	0.65	1.00		
Item 2. I often participate in fun conversations with my employees	5.28	1.51	0.54	0.47***	1.00	
Item 3. I participate in fun activities with my employees to distract myself at work	3.50	1.91	0.68	0.65***	0.51***	1.00

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. SD = standard deviation. Cronbach's alpha = 0.78. Based on 260 observations

Table A3. Factor loadings resulting from exploratory factor analysis of entrepreneurial diversionary play

	Loading	Communality
Item 1	0.78	0.60
Item 2	0.61	0.37
Item 3	0.84	0.71

Note(s): KMO = 0.68; Bartlett's test of sphericity = 231.8 ($p < 0.001$). Based on 260 observations

(2) Entrepreneurial serious play

The entrepreneurial serious play scale includes six items measuring an enjoyable approach to work tasks. Table A4 shows descriptive statistics of the three items; also here the item means are closer to the centre than to the extremes, and the standard deviations are not substantially different.

We also inspect inter-item correlations in Table A4. In general, the items are highly intercorrelated, ranging between 0.37 to 0.73, hence exceeding 0.30 (Boateng *et al.*, 2018). Table A4 also shows high corrected item-total correlations, ranging between 0.49 to 0.79, all above 0.30 (Boateng *et al.*, 2018).

The reliability coefficient Cronbach's alpha for the scale is 0.87, indicating very good reliability (DeVellis and Thorpe, 2021).

The KMO statistic is 0.85, deemed "meritorious" (Kaiser, 1974), and Bartlett's test is significant ($\chi^2 = 789.6$, $p < 0.001$), both validating the adequacy of the data for factor analysis. Exploratory factor analysis indicates a one-factor solution, based on one large eigenvalue (3.27, the other eigenfactors are much smaller than one); also parallel analysis supports a one-factor solution. Table A5 reveals that all items load strongly on this single factor (loadings between 0.52 and 0.86), and communalities range from 0.27 to 0.75, all above the minimum recommended values.

Table A4. Means, standard deviations, inter-item correlations, and corrected item-total correlations for entrepreneurial serious play

Item serious play	Mean	SD	Item-total correl.	Inter-item correlations 1	2	3	4	5	6
Item 1. I approach work-related problems in a playful way	4.14	1.64	0.68	1.00					
Item 2. I approach my work in a pleasant way that absorbs me	5.45	1.20	0.49	0.38	1.00				
Item 3. I often adopt a way of working that makes it fun	4.05	1.63	0.79	0.73	0.42***	1.00			
Item 4. I look for humour in what I have to do	4.68	1.64	0.65	0.50	0.37***	0.65***	1.00		
Item 5. I approach my tasks in a creative way to make them more interesting	4.72	1.62	0.78	0.57	0.45***	0.69***	0.60***	1.00	
Item 6. I use my imagination to make my work more interesting	5.03	1.51	0.68	0.53	0.41***	0.57***	0.48***	0.71***	1.00

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. SD = standard deviation. Cronbach's alpha = 0.87. Based on 260 observations

Table A5. Factor loadings resulting from exploratory factor analysis of entrepreneurial serious play

	Loading	Communality
Item 1	0.76	0.57
Item 2	0.52	0.27
Item 3	0.86	0.75
Item 4	0.71	0.51
Item 5	0.83	0.69
Item 6	0.73	0.53

Note(s): KMO = 0.85; Bartlett's test of sphericity = 789.6 ($p < 0.001$). Based on 260 observations

Notes

1. We call them entrepreneurs for the purpose of the present paper. We could also have called them small business owners, as is done in some of the literature we cite.
2. These five organisations included CMIST, PRESTAL, Masanté Pro, EnSanté, and Prévention et Santé. The total number of surveys sent out was 46,017. The low response rate for voluntary surveys is common for this kind of organisations which are involved in regulatory or administrative tasks. Response to the survey was on purely voluntary basis and did not entail any reward for the respondents. We ensured full confidentiality and anonymity of the respondents, which we communicated to them.
3. These 9 sectors have been merged into 5 sectors in the empirical analysis, because some sectors contain very few entrepreneurs. The remaining sectors are (1) manufacturing + construction; (2) trade, transport, and hospitality; (3) knowledge intensive sectors including information and communication + finance and insurance + real estate + professional, scientific and technical activities; (4) education and health; and (5) other sectors.

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