I Z A Institute
of Labor Economics
Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 18227

Daily Recovery Experiences of Japanese Small Business Owners and the Link with Well-Being and Ill-Being

Roy Thurik
Masatoshi Kato
Peter van der Zwan
Chihiro Kageura

OCTOBER 2025

I Z A Institute
of Labor Economics

Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 18227

Daily Recovery Experiences of Japanese Small Business Owners and the Link with Well-Being and Ill-Being

Roy Thurik
Montpellier Business School, Erasmus University Rotterdam, Unknown University and IZA

Masatoshi Kato
Kwansei Gakuin University

Peter van der Zwan
Leiden University

Chihiro Kageura
Unknown University and Université de Montpellier

OCTOBER 2025

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Daily Recovery Experiences of Japanese Small Business Owners and the Link with Well-Being and Ill-Being

Numerous studies deal with the link between daily recovery experiences (DRE) and mental health for employees. Hardly any studies exist for small business owners. This is surprising given that their health is not just important for themselves but also for their environment (such as employees, clients, suppliers, networks). In the present study we analyse if this link also works for some 2,400 Japanese small business owners. Next to overall DRE, four dimensions of DRE are distinguished (detachment, relaxation, mastery, and control). Mental health is captured using well-being (psychological well-being and job satisfaction) and ill-being (burnout and stress). First, we compare our DRE levels with many other (employee) studies. Second, controlling for many phenomena including participating in nomikai (a typical Japanese custom of getting together after office hours), we show that the quality of overall DRE is positively linked to well-being, and negatively to ill-being. Third, like the quality of overall DRE, nomikai activities of the owner are positively linked to their psychological well-being and job satisfaction, and negatively to burnout and stress. Its role seems to be independent of that of the quality of DRE.

JEL Classification: I12, I31, L26

Keywords: small business owners/managers, entrepreneurs, daily recovery experiences, Nomikai, well-being, job satisfaction, burnout, stress, Japan

Corresponding author:
Roy Thurik
Erasmus School of Economics
Erasmus University Rotterdam
P.O. Box 1738
3000 DR Rotterdam
The Netherlands

E-mail: thurik@ese.eur.nl

Acknowledgements: The present research was supported by the School of Economics of Kwansei Gakuin University, Erasmus Research Institute of Management of Erasmus University Rotterdam and LabEx Entreprendre, University of Montpellier (ANR-10-Labex-11-01, Agence Nationale de la Recherche). Early versions of the present paper have been read in Nishinomiya (Kwansei Gakuin University, May 2024), Osaka (Kwansei Gakuin University, July 2025), Belvaux Luxembourg (Statec, October 2025) and Ningbo China (Nottingham University Business School China, November 2025). The authors thank Akihito Shimazu, for his comments.

E-mail addresses: mkato@kwansei.ac.jp (M. Kato); p.w.van.der.zwan@law.leidenuniv.nl (P. van der Zwan); thurik@ese.eur.nl (R. Thurik); chihiro.kageura@gmail.com (Ch. Kageura)

ORCID: 0000-0001-6087-5253 (M. Kato); 0000-0003-2654-4367 (P. van der Zwan); 0000-0002-0242-6908 (R. Thurik); 0009-0000-6560-0312 (Ch. Kageura)

Financial funding: Japan Society for the Promotion of Science (No. 24K00262).

IRB: the survey was conducted anonymously by a reputable marketing research company, Intage, and did not involve any issues related to human rights or participant safety. Therefore, no IRB approval was sought for this study.

Data: available from M. Kato

Corresponding author: M. Kato

Document: japanese small business owners and recovery practices v28 IZA.docx

1. Introduction

The scholarly field of the (mental) health of small business owners (including small business managers, entrepreneurs and self-employed individuals) is rapidly developing (Stephan & Roesler, 2010; Stephan, 2018; Torrès & Thurik, 2019; Wiklund et al., 2020). Small business owners themselves are intrigued too. Multiple strategies exist to improve mental health. These include reducing work hours (Kamerāde et al., 2019; Voglino et al., 2022), enhancing skills (Belloni et al., 2022), increasing work efficiency, incorporating playful elements into work (Hunter et al., 2010; Sørensen & Spoelstra, 2012; Mukerjee et al., 2025), improving sleep (Guiliani & Torrès, 2018; Scott et al., 2021), avoiding stress-inducing activities (Sonnentag et al., 2012; Breevaart et al., 2020), recovery interventions (Williamson et al., 2021), and practicing mindfulness exercises (Althammer et al., 2021; Fazia et al., 2023). Not only researchers and business owners but also insurance companies have become interested in monitoring and helping improve small business owners' health (Brosseau et al., 2007; Singh et al., 2021). Lastly, small business owners' health is not only the responsibility of the owners but there are consequences for the people the business employs and its suppliers, clients, and their networks.

Daily recovery experiences for mental health are hardly investigated for small business owners. This is surprising since there is a wealth of studies for employees and much attention for (mental) health within research on entrepreneurs and small business owners. There are only two recent studies: Bennett et al. (2023) and Le Moal et al. (2025), both using the well-known approach of the quality of daily recovery experiences (DRE). In particular, they use the four dimensions of DRE (detachment, relaxation, mastery and control) proposed by Sonnentag & Fritz (2007) as the Recovery Experience Questionnaire (REQ). Bennet et al. (2023) use work engagement, emotional exhaustion and sleep quality as indicators of mental health and Le Moal et al. (2025) use psychological well-being and burnout. Both studies show that, in general, daily recovery experiences are beneficial for mental health indicators but that detachment does not seem to contribute much. The disadvantage of both studies is that they do not analyse the risk of multicollinearity between the four DRE dimensions which may distort the identification of the link with mental health measures. The shortcoming of Bennett et al. (2023) is its small sample size (N=247) of just early-stage entrepreneurs. A peculiarity of the dataset of Le Moal et al. (2025) is the surprisingly low level of the four DRE dimensions. A strong point is that the dataset (N=1043) consists of four slightly different subsets which provide similar results. This implies some form of internal replication. Another strong point is that the internal consistency and validity assessment of the questionnaire for French small business owners is explicitly dealt with in Le Moal et al. (2024a).

The present study takes Le Moal et al. (2025) as a starting point and aims to first replicate it using a survey of some 2,400 Japanese small business owners and then to extend it with two more mental health measurements (job satisfaction and stress) and with analysing the influence of *nomikai* (飲み会), a specific Japanese custom of getting together after office hours. *Nomikai* can be conceived as a form of regular recovery. We will also extend it with a wider set of controls. Apart from these extensions, replication is not straightforward because Japanese perceptions of recovery may not be comparable with Western perceptions. In Western countries, work tends to promote individual self-realization and personal growth, and the value of leisure is highly emphasized (Hu et al., 2014). However, in East Asian cultures, particularly in Japan, contribution to the group and self-sacrifice are highly valued, and there is a strong ingrained perception that "*work is life*" (Hu et al., 2014). Such fundamental cultural differences can influence motivation for working, and the patterns of effective psychological detachment from work and subsequent recovery. Taken together, we perform a so-called constructive replication (Block et al., 2023).

The justification of the present study is in part based on the firm belief that single data set studies can lead to erroneous understandings and that internal replication (more than one data set per study) or external replication (starting a study with an attempt at replicating an earlier one and then extending it) is the better approach (Van Witteloostuijn, Dejardin, & Pollack, 2021; Block et al., 2023). Scientific journals in the management, organisation and entrepreneurship arena sometimes seem obsessed by new theory. Theory development obviously is a crucial task of these journals but sometimes it is as if this obsession is detrimental to testing if existing theories work in new and divergent environments or that a better theory can be developed starting with an external replication attempt.

In sum, we investigate the relationships between daily recovery experiences (DRE) after work and mental health based on a survey of some 2,400 Japanese small business owners. DRE are captured using the four dimensions proposed by Sonnentag & Fritz (2007) (detachment, relaxation, mastery and control) and mental health is captured using well-being (psychological well-being and job satisfaction) and ill-being (burnout and stress). Both linear regressions and structural equation modelling (SEM) are used to present our results. We will use the Japanese version of the DRE questionnaire (Shimazu et al., 2012) which was validated for employees. In the results section of the present paper we report on the validation of this questionnaire for Japanese small business owners.

We find that Japanese small business owners have levels of recovery experiences for all four dimensions comparable to those of US early-stage entrepreneurs and for employees in general. *Second*, we find that – like in France, the US and for employees in general – experiences of detachment after work have the lowest scores among daily recovery experiences for Japanese small business owners while experiences of control have the highest. *Third*, controlling for many phenomena, both linear regressions and SEM analyses show that for Japanese small business owners, the quality of overall daily recovery experiences is positively linked to psychological well-being and job satisfaction, and negatively to burnout and stress. The same is found in France for well-being and burnout. Even after including participation in *nomikai* (a typical Japanese custom of after-hours bonding with a recovery aspect) these results stay intact. *Fourth*, these *nomikai* activities of the owner are positively linked to psychological well-being and job satisfaction, and negatively to burnout and stress. Their role seems to be independent of that of the quality of overall daily recovery experiences. *Fifth*, we find that the detachment dimension is negatively correlated with psychological well-being and job satisfaction, while the other three dimensions show the expected positive links with well-being. A similar result is found in France where detachment is the only DRE dimension having no link with well-being. *Sixth*, the detachment and control dimensions do not show the expected negative links with burnout and stress while the relaxation and mastery dimensions do.

The present study aims to enrich the understanding of recovery experiences and their impact on the mental health of small business owners, a relatively underexplored area in entrepreneurship research. As we will explain more precisely in the discussion section, our analyses contribute to the literature of the health of small business owners, of DRE and of replication in the entrepreneurship literature.

Our study is organized as follows: in the second section, we provide a brief review of the literature on recovery and *nomikai*. We refer to Le Moal et al. (2025) for a more comprehensive outline of small business owners' health. Next, we describe the methodology used, including the data collection, measurement tools and a comparison of Japanese, US and French DRE measures. The third section presents the results of our analyses, highlighting the relationships between DRE and mental health outcomes, specifically psychological well-being, job satisfaction, burnout and stress. Finally, we discuss the implications of our findings, propose intervention strategies, acknowledge the limitations of our study, and outline directions for future research. In section 4.1 we deal with the validation of the DRE scales for Japanese small business owners.

2. Theory and hypotheses

Sabine Sonnentag is a central figure in occupational health psychology, particularly known for her research on daily recovery experiences from work-related stress. Her work has shaped our theoretical and empirical understanding of how employees recuperate during non-work hours and how this affects well-being and performance. Her early diary studies demonstrated that recovery is a daily process, showing that successful detachment from work during off-job time is associated with lower fatigue, better mood, and enhanced job performance (Sonnentag, 2001; Sonnentag & Bayer, 2005). She argued that recovery experiences are not merely the absence of work but involve psychological mechanisms of how non-work time can be made useful to fight the possibly negative effect of stress accumulated during work time.

A major contribution is the development of the daily recovery experience (DRE) framework, a psychometric tool which identifies four core recovery experiences: psychological detachment (mentally

switching off from work), relaxation (engaging in calming, low-effort activities), mastery (engaging in non-work challenges), and control (autonomy over leisure time, or time in general). This framework was operationalized in the Recovery Experience Questionnaire (REQ), validated by Sonnentag & Fritz (2007), which has become a standard instrument in recovery research. In the present study, we employ the Japanese version of the DRE questionnaire (Shimazu et al., 2012), originally validated for employees, and examine its validity for Japanese small business owners in section 4.1 of the present paper.

There are two approaches to analysing the recovery process: the activities approach and the experiences approach. That former aims at what people are doing, the latter aims at what psychological states people are in. See Sonnentag et al. (2022) for a recent survey of theoretical frame work of recovery research. We chose the experiences approach aiming to replicate and extend some earlier recovery studies of small business owners.

Sonnentag's work also emphasizes the contextual and individual differences in recovery, highlighting factors such as workload, job demands, leisure activities, and personality traits that influence how and to what extent recovery occurs (Sonnentag & Fritz, 2015). It also emphasizes the importance of recovery not only after long breaks, but as a daily necessity. Taken together, Sonnentag's contributions provide a robust foundation for understanding recovery as a key process in managing occupational stress and promoting sustainable performance. How the field of recovering from everyday work may advance is set out in Sonnentag et al. (2022). In the present study, we aim to broaden this understanding by investigating small business owners (for the third time after Bennett et al. (2023) and Le Moal et al., 2025), by using a Japanese context (for the second time after Shimazu et al., 2012) and by introducing the role of socializing after working hours (*nomikai*) as a 'competitor' for Sonnentag's four dimensions.

In Japanese workplaces, people traditionally have informal social drinking gatherings after work, known as *nomikai* (飲み会). It is not unusual that *nomikai* is held several times a week, or sometimes it is continued until late at night. High- and low-ranking individuals are expected to socialize after work as part of *nomikai* (Gobel & Miyamoto, 2024). Managers may see *nomikai* as an important opportunity to interact with their employees in a more relaxed setting, so that they can hear frank opinions that they may not normally hear in the office. It has been shown that *nomikai* plays an important role in strengthening solidarity among members of the workplace to relieve stress and to build solidarity in Japanese workplaces, especially among middle-aged men (Kobayashi et al., 2014). This culture is fading compared to the past, and now the younger generation are increasingly not participating in *nomikai*, but this culture still persists to a certain extent in Japanese workplaces. If managers participate more often in *nomikai* hosted by employees, communication between them would be improved. In addition, the fact that employees are holding and inviting managers to *nomikai* itself would mean that communication between them in the workplace is going well. As a result, managers may be able to reduce their stress level and increase their job satisfaction.

However, in practice, employees often find it difficult to decline invitations to *nomikai* from their superiors, even when fatigued, which may be interpreted as a form of presenteeism. This aligns with Cooper and Lu (2016), who argue that employees may push themselves to attend work even while unwell in order to maintain a favorable image. Similar dynamics apply to invitations from colleagues: employees may feel obliged to accept as a sign of loyalty, reciprocity, or to avoid disrupting group harmony (Yuki, 2003; Cooper & Lu, 2016). As a result, older generations – more than younger ones – often find it particularly difficult to refuse *nomikai*, leading to a reduction in time that could otherwise be used for rest and recovery. Moreover, work-related conversations often take place during *nomikai*, potentially impeding psychological detachment (Shimazu et al., 2012; Hu et al., 2014). Yuki (2003) argues that East-Asian collectivism emphasizes cooperative behavior and the preservation of relational harmony within groups, which may encourage employees to attend such gatherings even when not fully recovered from the previous workday. Informal norms such as *nomikai* and expectations of presenteeism can thus blur the boundary between work and leisure, undermining the possibility of true psychological and also physical recovery. These dynamics may further contribute to a perceived moral obligation to engage in after-hours social activities as an extrinsic motivation for social approval in cultures that value group contribution and self-sacrifice (Hu et al., 2014).

So, apart from productivity and organisational effects of *nomikai*, there may also be mental health effects (Hagihara et al., 2000). Drinking with colleagues in *nomikai* has been shown to affect stress and job satisfaction (Hagihara et al., 2000), which is in line with earlier findings that moderate alcohol consumption reduces stress (Baum-Baicker, 1985) and reduces work performance (Mangione et al., 1999). We use *nomikai* as a 'competitor' of DRE in order to better establish the role of these experiences. Obviously, we surmise that there will be a positive link between participating in *nomikai* and the mental health of the business owner. There may be substitution effects between participating in *nomikai* and DRE.

We refer to Le Moal et al. (2025) for a comprehensive outline of small business owners' health and recovery, including much supportive literature, in part based on the conservation of resources (COR) theory and existentialism. According to the COR model, individuals strive to retain, protect, and build resources but experience stress as a result of resource loss. In this logic, recovery periods are crucial for replenishing depleted resources, supporting sustained productivity, and reducing vulnerability to stress. Moreover, the strong commitment of owners to their businesses makes them particularly prone to experiencing burnout, particularly since entrepreneurs are said to possess an existentialist nature, viewing their business undertakings as a personal mission that reflects their core values and life purpose (Torrès et al., 2022).

We have no encompassing theoretical justification for using our four measures of mental health. We include psychological well-being and burnout because Le Moal et al. (2025) use these two measures and we aim to confront our results with theirs. We value the discrimination between well-being and ill-being because the entrepreneurial journey is marked by high levels of both well-being and stressors (Torrès & Thurik, 2019; Stephan et al., 2023). However, we do not want to use just one measure for well-being and ill-being. A common framework in psychology differentiates between hedonic (pleasure and happiness) and eudaimonic (meaning and self-realisation) measures (Ryan and Deci, 2001). So, next to the eudaimonic psychological well-being measure we use the hedonic job satisfaction measure. Moreover, we supplement perceptions of burnout with its probable precursor, perceptions of work stress.

Taking the above into account, we posit the following hypotheses:

H1a. The quality of DRE is positively related to small business owners' psychological well-being.

H2a. The quality of DRE is positively related to small business owners' job satisfaction.

H3a. The quality of DRE is negatively related to small business owners' perception of burnout.

H4a. The quality of DRE is negatively related to small business owners' perception of stress.

H1b. Involvement in *nomikai* is positively related to small business owners' psychological well-being.

H2b. Involvement in *nomikai* is positively related to small business owners' job satisfaction.

H3b. Involvement in *nomikai* is negatively related to small business owners' perception of burnout.

H4b. Involvement in *nomikai* is negatively related to small business owners' perception of stress.

We have no well-founded priors about the relative effects of the four dimensions of daily recovery experiences on our four measures of mental health. The exception is the effect of detachment which may be weaker than that of the other three. This result is established in Le Moal et al. (2025) and explained using the concept of existentialism. This result is also established in Bennet et al. (2023) who state that entrepreneurial passion may be at odds with wanting to detach.

3. Data and measurement

3.1. Our survey

We commissioned Intage, one of Japan's major marketing research companies, to conduct an online survey titled "Survey on the Labor of Business Owners and Employees" from July 11 through July 16, 2024.[1] This survey was targeted at owners/managers of small businesses with 4 to 99 employees (excluding the owner/manager). We received 2,458 valid responses out of 5,079 survey targets (a response rate of 48.4%).[2] After remove missing observations for the education variable, our estimation sample consists of 2,379 observations. In order to screen out business owners/managers, we first asked the question, *"Are you an owner or (and) manager of a business (independent, subsidiary, franchise, etc.)?"* Then, we asked them to answer about the business of their 'main organization,' since they may be involved in multiple businesses.

3.2. Daily recovery experiences

Our measure of daily recovery experiences (DRE) is based on Sonnentag and Fritz (2007), distinguishing between four dimensions (detachment, relaxation, mastery and control). Each dimension is measured using four items. The list of 16 items is preceded by the statement *"Please indicate to what extent the following statements describe your behaviour after working hours."* Sample items include *"I forget about work"* for detachment, *"I decompress and relax"* for relaxation, *"I learn new things"* for mastery, and "*I feel like I can decide what to do for myself"* for control. Responses were provided on a 5-point scale ranging from "completely disagree" to "completely agree". A higher score reflects a higher level of daily recovery. The Cronbach alpha values are 0.77 for detachment, 0.87 for relaxation, 0.84 for mastery, 0.82 for control, and 0.89 for overall DRE. The Cronbach alpha values in the French data set of Le Moal et al. (2025) are higher with 0.88 for detachment as the lowest.

3.3. *Nomikai*

We add a measure for *nomikai* using the question "*I never participate in the nomikai of my employees*" on a 7-point scale ranging from "completely disagree" to "completely agree'. We reverse the scores such that a higher value relates to more participation in *nomikai*. As stated above, *nomikai* is a Japanese custom of getting together after office hours and can be conceived as a form of regular recovery.

3.4. Dependent variables

Mental health is captured by two measures of well-being (psychological well-being and job satisfaction) and two measures of ill-being (burnout and stress). For *psychological well-being* we use the six-item scale from Culbertson, Fullagar, and Mills (2010), which is a short version of the scale developed by Ryff (1989). Example items are "*I had positive and satisfying relationships with those at work today*" (reflecting positive relationships) and "*My work today challenged me and made me grow as a person*" (reflecting personal growth). The remaining items reflect four other dimensions of eudaimonic well-being including self-acceptance, purpose in life, environmental mastery, and autonomy (Ryff, 1989).[3] Responses were given on a 5-point scale ranging from "strongly disagree" to "strongly agree". Cronbach alpha is 0.64.[4]

Job satisfaction was measured using the three-item Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS), developed by Cammann, Fichman, Jenkins, and Klesh (1979).

---

[1] Studies using surveys conducted by Intage have been published in a wide range of fields (Diamond et al., 2020; Kikuchi et al., 2023).

[2] Online surveys conducted by marketing research companies such as Intage typically achieve high response rates, as they are distributed to large panels of pre-registered respondents who have agreed in advance to participate. These panelists are often incentivized with small monetary rewards or points for each completed survey, which helps maintain engagement and encourages consistent participation.

[3] The items are "*I feel positive about myself and the events that happened at work today*" for self-acceptance, "*I did not have a sense of purpose and meaning in my work today*" for purpose in life (reverse coded), "*I had difficulty managing my daily affairs and controling events at work today*" for environmental mastery (reverse coded), and "*Social pressures and the expectations of others made me act and think in certain ways at work today*" for autonomy (reverse coded).

[4] Alpha increases to 0.73 when the autonomy dimension is excluded from the scale. Results with this 5-item psychological well-being scale are qualitatively similar to that of the 6-item scale.

Example items are *"All in all, I am satisfied with my job"* and *"In general, I don't like my job"* (reverse coded). Responses were on a 5-point scale ranging from "strongly disagree" to "strongly agree". Cronbach alpha is 0.84.

Burnout was measured with 10 questions (as developed by Malach-Pines, 2005). Respondents were asked about their feelings in terms of, for example, being tired, hopeless, and depressed as a response to the following question: "*When you think about your work overall, how often do you feel the following?*". Responses were provided on a 7-point scale ranging from "never" to "always". Cronbach alpha is 0.92, similar to that in the French data set.

Stress at work was measured with four items (Motowidlo et al., 1986) of which examples 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 alpha of 0.87.

3.5. Controls

We control for several variables at the business owner level including gender (female=1; male=0), age in years, the presence of a life partner (yes=1; no=0), educational attainment (high school, vocational, junior college, university, master, doctoral), experience as a manager in years, industry experience in years, and whether the owner is the founder of the business (yes=1; no=0). Control variables at the firm level include size (number of employees), business age in years, family business (yes=1; no=0), sector (we aggregated the sector variable into 12 categories: construction, manufacturing, ICT, transport, wholesale/retail, finance/insurance, real estate, science, consumer/leisure, education, health, other sectors/services) and location of the business (47 Japanese prefectures)[5]. We refrain from making separate hypotheses about the above controls since this is not the essence of the present study. However, in the discussion we will comment on their effects which often provide confidence in the results.

3.6. Comparing DRE for Japanese and French small business owners

Table 1 provides descriptive statistics for overall DRE, the four DRE dimensions, *nomikai*, the four dependent variables, and the control variables.

Given that the results of Bennet et al. (2023) are based on a sample of early-stage entrepreneurs (founded a business in the previous three years) – and the fact that only a small subset of our current sample (<2%) consists of early-stage entrepreneurs – we focus on the results of Le Moal et al. (2025) to compare our numbers with.

Interestingly, we find that the average values for the four recovery dimensions are higher in Japan than in France. See Table 5 below. For the current Japanese sample, we observe average values above 3 for each dimension, while for the French sample only the average value for the control dimension exceeded 3, that is, 3.26. The difference between the French and Japanese sample is largest for detachment (3.06 in Japan versus 2.28 in France), followed by relaxation (3.55 in Japan versus 2.80 in France), mastery (3.47 in Japan versus 2.93 in France), and control (3.89 in Japan versus 3.26 in France). We will return to these findings in the discussion. The Japanese data set contains just 7% women while this number is 49% in the French data set of Le Moal et al. (2025).[6] Average age in the Japanese data set is 58 years while 50 in the French one.

[5] According to Motohashi et al. (2013), residents in urban areas have approximately three times higher risk of mental illness due to stress than residents in non-urban areas.

[6] The percentage of female executives in Japanese companies is extremely low. Of the 1,643 companies listed on the Tokyo Stock Exchange's Prime Market, only 13 are headed by a female CEO, accounting for just 0.8% of the total. Gender equality in Japan is among the lowest in the world (World Economic Forum, 2022).

Table 1. Means, standard deviations, and minimum/maximum values for overall DRE, DRE dimensions, *nomikai*, dependent variables, and control variables.

Variable	Mean	SD	Min.	Max.
Overall DRE (Daily Recovery Experiences)	3.49	0.53	1	5
Detachment	3.06	0.74	1	5
Relaxation	3.55	0.72	1	5
Mastery	3.47	0.68	1	5
Control	3.89	0.67	1	5
Nomikai	4.33	1.58	1	7
Psychological well-being	3.39	0.51	1	5
Job satisfaction	5.01	1.18	1	7
Burnout	3.30	1.01	1	7
Stress	4.28	1.22	1	7
Female	0.07	0.25	0	1
Age	58.28	9.08	23	84
Life partner	0.76	0.43	0	1
Education: High school	0.22	0.42	0	1
Education: Vocational	0.11	0.31	0	1
Education: Junior college	0.04	0.19	0	1
Education: University	0.52	0.50	0	1
Education: Master	0.06	0.23	0	1
Education: Doctoral	0.05	0.22	0	1
Manager experience (years)	16.68	10.93	0	54
Industry experience (years)	25.70	12.32	0	60
Business size (# of employees)	16.83	17.76	4	99
Business age	34.78	27.40	0	366
Family business	0.32	0.47	0	1
Founder	0.53	0.50	0	1

Based on 2,379 observations. SD=standard deviation; Min.=minimum value; Max.=maximum value. The means of the location and sector dummies are available from the authors.

Table 2 shows the Pearson correlation coefficients between overall DRE, the four DRE dimensions, *nomikai*, and the four dependent variables.

Among the four dimensions of DRE, the correlations between detachment and relaxation, and that between relaxation and control are the highest. See Table 2. The same is observed in France. See Table 5 below. The correlation between *nomikai* and DRE and its four dimensions seems low. Hence, there is no reason to suppose that there are substitution effects between them. All the more reason to establish its influence on well-being and ill-being, next to that of the four DRE dimensions. As may be expected, the correlations between the two dimensions of well-being (psychological well-being and job satisfaction) and of ill-being (burnout and stress) are high, 0.66 and 0.52, respectively. The correlation between DRE and psychological well-being (0.48) is comparable with that in France (0.52), whereas that between DRE and burnout (-0.30) is lower in absolute sense in Japan than in France (-0.56). We will return to these findings in the discussion.

Table 2. Pearson correlations overall DRE, DRE dimensions, *nomikai*, and dependent variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Overall DRE	1.00								
2. Detachment	0.70	1.00							
3. Relaxation	0.87	0.62	1.00						
4. Mastery	0.70	0.22	0.45	1.00					
5. Control	0.73	0.24	0.53	0.47	1.00				
6. *Nomikai*	0.04	-0.06	0.03	0.06	0.09	1.00			
7. Psych. well-being	0.38	0.04	0.34	0.36	0.44	0.26	1.00		
8. Job satisfaction	0.38	0.03	0.33	0.40	0.40	0.21	0.63	1.00	
9. Burnout	-0.30	-0.14	-0.31	-0.25	-0.22	-0.15	-0.51	-0.46	1.00
10. Stress	-0.22	-0.18	-0.22	-0.22	-0.05	-0.06	-0.28	-0.31	0.52

Based on 2,379 observations. All correlations have $p<.01$ except for the overall DRE–*nomikai* ($p=.06$), relaxation–*nomikai* ($p=.12$), detachment–psychological well-being ($p=.05$), and detachment–job satisfaction ($p=.12$) pairs.

4. Analyses and results

First, we report on the validation of the Japanese version of the DRE questionnaire. Second, we perform linear regressions (OLS) with the measures of well-being (psychological well-being and job satisfaction) and ill-being (burnout and stress at work) as the dependent variables, with the DRE dimensions and *nomikai* as the independent variables. Third, we perform structural equation modelling (SEM).

4.1. Validation of DRE questionnaire among Japanese business owners

We began by examining the correlation matrix of all sixteen DRE items. Within each of the four dimensions, we observed statistically significant inter-item correlations ($p < .001$), suggesting internal coherence within the dimensions.

Next, we conducted an exploratory factor analysis (EFA), retaining all factors with eigenvalues greater than 1. This resulted in a three-factor solution accounting for 84% of the total variance. After applying promax rotation and considering all factor loadings greater than 0.40, we identified the following structure: the first factor comprised all eight items related to detachment and relaxation; the second factor included the four items associated with control; and the third factor encompassed the four items related to mastery. Table 3 presents the factor loadings for this three-factor solution. Although this three-factor structure diverges from the original four-factor model, it aligns with previous findings from a validation study of the Japanese version of the DRE among employees (Shimazu, 2012).

Subsequently, we performed a series of confirmatory factor analyses (CFA) to compare the fit of one-factor, three-factor, and four-factor models. The four-factor model yielded the following goodness-of-fit indices statistics: RMSEA = 0.099, CFI/TLI = 0.88/0.86, SRMR = 0.081, $\chi^2(98) = 2{,}452$, $p < .001$. The three-factor model showed somewhat poorer fit: RMSEA = 0.111, CFI/TLI = 0.85/0.82, SRMR = 0.086, $\chi^2(101) = 3{,}142$, $p < .001$. The one-factor model demonstrated the weakest fit: RMSEA = 0.170, CFI/TLI = 0.63/0.58, SRMR = 0.127, $\chi^2(104) = 7{,}495$, $p < .001$. Importantly, likelihood ratio tests indicated that the four-factor model fits the data significantly better than both the three-factor model ($\Delta\chi^2(3) = 690$, $p < .001$) and the one-factor model ($\Delta\chi^2(6) = 5{,}043$, $p < .001$). Furthermore, in the four-factor model, all items loaded significantly on their respective latent constructs ($p < .001$). Hence, the four-factor model is preferred based on the CFA analyses.

We also assessed internal consistency of the four dimensions using Cronbach alpha: detachment ($\alpha = 0.77$), relaxation ($\alpha = 0.87$), mastery ($\alpha = 0.84$), and control ($\alpha = 0.82$), all indicating acceptable to high reliability.

In conclusion, the findings provide support for the validity and reliability of the DRE questionnaire as a measure of recovery experiences among business owners in the Japanese context. They support the broad applicability of the Japanese version of the DRE (Shimazu, 2012).

Table 3. Rotated factor loadings resulting from exploratory factor analysis (promax rotation).

Item	Factor 1 (D+R)	Factor 2 (C)	Factor 3 (M)
I forget about work. D	**0.63**	-0.16	0.03
I don't think about work at all. D	**0.66**	-0.38	0.03
I distance myself from my work. D	**0.79**	-0.12	-0.06
I get a break from the demands of work. D	**0.70**	0.17	-0.03
I kick back and relax. R	**0.59**	0.22	0.04
I do relaxing things. R	**0.61**	0.35	0.02
I use the time to relax. R	**0.65**	0.35	-0.02
I take time for leisure. R	**0.63**	0.15	0.07
I learn new things. M	-0.06	0.14	**0.63**
I seek out intellectual challenges. M	-0.0003	-0.12	**0.88**
I do things that challenge me. M	-0.06	0.02	**0.83**
I do something to broaden my horizons. M	0.19	0.11	**0.60**
I feel like I can decide for myself what to do. C	-0.002	**0.64**	0.05
I decide my own schedule. C	-0.02	**0.70**	-0.006
I determine for myself how I will spend my time. C	0.08	**0.77**	-0.02
I take care of things the way that I want them done. C	0.29	**0.56**	0.01

Based on 2,379 observations. Loadings with an absolute value larger than 0.40 are in bold.
D=Detachment; R=Relaxation; M=Mastery; C=Control.

4.2. DRE and mental health: Linear regressions (OLS)

First, we include overall DRE as the independent variable in our regression framework. Standard errors robust to heteroskedasticity are used. The OLS results presented in Table 4 indicate that overall DRE is significantly associated with all four measures of mental health and in the expected directions. Specifically, small business owners reporting higher levels of DRE exhibit significantly greater psychological well-being (β=0.343; p<.001) and job satisfaction (β=0.779; p<.001), and significantly lower levels of burnout (β=-0.538; p<.001) and stress (β=-0.481; p<.001), compared to those reporting lower levels of DRE.

We also find that *nomikai* participation is significantly related to three of the four mental health measures, again in the expected directions. That is, small business owners who more frequently participate in *nomikai* with their employees report significantly higher psychological well-being (β=0.073; p<.001) and job satisfaction (β=0.131; p<.001), and lower levels of burnout (β=-0.072; p<.001), than those who participate less frequently.

Among the control variables, individual age shows consistent relationships across all four dependent variables. Older small business owners report significantly higher levels of well-being and lower levels of ill-being than younger owners (p<.01 for each dependent variable). Additionally, gender is significantly and positively associated with both ill-being measures, indicating that female business owners experience significantly higher levels of burnout (β=0.283; p=.001) and workplace stress (β=0.296; p=.01) than their male counterparts.

Table 4. OLS regressions with well-being, job satisfaction, burnout, and stress as dependent variables; overall DRE and *nomikai* are the independent variables.

	Psych. wellbeing		Job satisfaction		Burnout		Stress	
Overall DRE	0.343	**	0.779	**	-0.538	**	-0.481	**
	(0.020)		(0.046)		(0.045)		(0.055)	
Nomikai	0.073	**	0.131	**	-0.072	**	-0.023	
	(0.007)		(0.016)		(0.014)		(0.019)	
Female	0.006		-0.045		0.283	*	0.296	*
	(0.039)		(0.091)		(0.087)		(0.108)	
Age	0.007	**	0.012	**	-0.013	**	-0.013	**
	(0.001)		(0.003)		(0.003)		(0.003)	
Life partner	0.037		0.054		-0.152	*	-0.185	*
	(0.023)		(0.053)		(0.048)		(0.058)	
Manager experience	-0.001		-0.002		-0.001		-0.006	*
	(0.001)		(0.003)		(0.003)		(0.003)	
Industry experience	0.003	*	0.010	**	-0.000		0.007	*
	(0.001)		(0.002)		(0.002)		(0.003)	
Business size	0.001		0.002		0.000		-0.001	
	(0.001)		(0.001)		(0.001)		(0.002)	
Business age	-0.000		-0.002		0.002		0.003	*
	(0.000)		(0.001)		(0.001)		(0.001)	
Family business	-0.015		0.048		0.013		-0.050	
	(0.021)		(0.050)		(0.044)		(0.054)	
Founder	0.039		0.163	*	-0.060		-0.061	
	(0.025)		(0.062)		(0.056)		(0.069)	
Observations	2379		2379		2379		2379	
R-squared	0.25		0.23		0.17		0.11	

** $p<.001$, * $p<.05$.

Estimated coefficients are shown, with robust standard errors between parentheses. Gender: male = 0, female = 1; Life partner: yes = 1, no = 0; Experience variables are in years; Business size = number of employees; Business age in years; Family business: yes = 1, no = 0; Founder: yes = 1, no = 0. Education, location, and sector dummies are included; results are available from the authors.

Second, we replace overall DRE with the four dimensions (detachment, relaxation, mastery, and control). The OLS results are in Table 5. For relaxation and mastery, the results are in accordance with what we find for overall DRE: significantly and positively related to both measures of well-being, and significantly and negatively related to both measures of ill-being.

The results are different – and not entirely in line with our expectations – for both detachment and control. Detachment does not show the expected relationships with any of the dependent variables. That is, detachment is significantly and *negatively* related to both measures of well-being, significantly and *positively* related to burnout, and *not* significantly associated with stress. Control does not show the expected relationships with ill-being. That is, we do not find a significant association between control and burnout, and we find an unexpected significant and positive association between control and stress.[7] The unexpected results for Japanese business owners can be caused by collinearity between the dimensions of DRE or by some theoretical or clinical effect. Our research strategy is to first investigate the likelihood that collinearity plays a role.

[7] The results for French business owners are mostly in line with the expectations with the exception that the links between detachment and well-being and that between mastery and burnout are not significantly different from zero. See Table 4 of Le Moal et al. (2025).

Table 5. OLS regressions with well-being, job satisfaction, burnout, and stress as dependent variables; DRE dimensions and *nomikai* are the independent variables.

	Psych. well-being		Job satisfaction		Burnout		Stress	
Detachment	-0.141	**	-0.344	**	0.098	*	-0.085	
	(0.018)		(0.039)		(0.036)		(0.051)	
Relaxation	0.169	**	0.393	**	-0.401	**	-0.304	**
	(0.022)		(0.050)		(0.044)		(0.059)	
Mastery	0.105	**	0.381	**	-0.137	**	-0.323	**
	(0.020)		(0.044)		(0.037)		(0.051)	
Control	0.204	**	0.339	**	-0.039		0.273	**
	(0.019)		(0.045)		(0.039)		(0.051)	
Nomikai	0.061	**	0.102	**	-0.065	**	-0.028	
	(0.007)		(0.015)		(0.014)		(0.019)	
Female	-0.014		-0.082		0.285	*	0.264	*
	(0.036)		(0.085)		(0.086)		(0.105)	
Age	0.007	**	0.014	**	-0.013	**	-0.012	**
	(0.001)		(0.003)		(0.002)		(0.003)	
Life partner	0.049	*	0.076		-0.152	*	-0.165	*
	(0.021)		(0.050)		(0.048)		(0.057)	
Manager experience	-0.001		-0.003		-0.001		-0.006	
	(0.001)		(0.003)		(0.002)		(0.003)	
Industry experience	0.002		0.008	**	0.001		0.006	*
	(0.001)		(0.002)		(0.002)		(0.003)	
Business size	0.001	*	0.002		0.000		-0.001	
	(0.001)		(0.001)		(0.001)		(0.002)	
Business age	-0.000		-0.001		0.001		0.003	*
	(0.000)		(0.001)		(0.001)		(0.001)	
Family business	-0.016		0.034		0.021		-0.023	
	(0.020)		(0.048)		(0.043)		(0.054)	
Founder	0.041		0.153	*	-0.071		-0.046	
	(0.023)		(0.059)		(0.055)		(0.067)	
Observations	2379		2379		2379		2379	
R-squared	0.34		0.32		0.19		0.14	

** $p<.001$, * $p<.05$.
Estimated coefficients are shown, with robust standard errors between parentheses. Gender: male = 0, female = 1; Life partner: yes = 1, no = 0; Experience variables are in years; Business size = number of employees; Business age in years; Family business: yes = 1, no = 0; Founder: yes = 1, no = 0. Education, location, and sector dummies are included; results are available from the authors.

As noted above, the correlations among the DRE dimensions are substantial in some cases. That is, Table 2 shows a correlation of 0.62 between relaxation and detachment ($p<.001$), a correlation of 0.53 between relaxation and control ($p<.001$), and a correlation of 0.45 between relaxation and mastery ($p<.001$). In an effort to detect the role of collinearity, we apply so-called *residualisation* to mitigate multicollinearity (García et al., 2020). We repeat the exercise of Table 5 but replace the detachment variable with the residuals resulting from a regression with detachment as the dependent variable and all other DRE dimensions and control variables as the independent variables. While the results for detachment are unaltered by definition (García et al., 2020), we are specifically interested in the results for control. Importantly, control still does not show the expected relationships with ill-being. That is, control is not significantly related to burnout (β=-0.065, p=.09) while being significantly and positively related to stress (β=0.279, $p<.001$; full set of results available from the authors). In separate exercises we also replace the other DRE variables with their residuals resulting from similar auxiliary regressions as we did for detachment. Two observations from these additional exercises remain. *First*, detachment is significantly and negatively related to both measures of well-being in each of these auxiliary

regressions.[8] *Second*, control is significantly and positively associated with stress in each auxiliary regression.[9] Hence, also after mitigating multicollinearity the unexpected associations in our Japanese dataset remain intact. In our discussion, we will return to these interesting findings with some ideas based upon the psychology of the entrepreneur.

4.3. DRE and mental health: SEM analysis

We also performed structural equation modelling (SEM) via maximum likelihood with standard errors robust to non-normality using the Satorra-Bentler adjustment. The SEM approach allows us to model latent variables – the four DRE dimensions and the four mental health dimensions – explicitly and to incorporate a covariance structure between latent variables, and specifically among our four mental health dimensions.

In our set-up the four DRE dimensions and the four mental health dimensions are modelled as latent variables, and overall DRE is modelled as a second-order latent variable. The SEM results, that is, the standardized coefficients related to DRE and *nomikai*, are shown graphically in Figure 1. Note that Figure 1 does not show the full set of results. That is, the coefficients of the control variables and all items related to the latent variables (DRE and mental health), and the correlations among the four mental health variables are available from the authors. Figure 1 shows that higher DRE levels are significantly related to higher levels of psychological well-being and job satisfaction, and lower perceptions of burnout and stress at work among business owners. *Nomikai* is significantly and positively related to psychological well-being and job satisfaction, and significantly and negatively related to burnout and stress at work. This model provides a satisfactory fit to the data: RMSEA = 0.037, CFI/TLI = 0.64/0.78, SRMR = 0.042, $\chi^2(5871) = 28{,}269$, $p < 0.001$.

To assess the relationships between the four DRE dimensions and mental health in a SEM setting we also ran a model without the second-order latent variable. Thus, we removed overall DRE from our model, and added direct paths from detachment, relaxation, mastery and control to the four mental health variables. The results are displayed graphically in Figure 2. We observe that detachment is significantly and negatively related to psychological well-being and job satisfaction, significantly and positively related to burnout, and not significantly related to stress. Relaxation and mastery are significantly and positively related to both well-being measures, and significantly and negatively related to both ill-being measures. Furthermore, control is significantly and positively related to both well-being measures, not significantly related to burnout, and significantly and positively related to stress. Finally, *nomikai* is significantly and positively related to both well-being dimensions, and significantly and negatively related to both ill-being dimensions. This model provides a somewhat better fit to the data than the model in Figure 1: RMSEA = 0.036, CFI/TLI = 0.66/0.79, SRMR = 0.039, $\chi^2(5857) = 27{,}236$, $p < 0.001$.

Among the control variables (not shown), we arrive at the same conclusions as in Table 5. That is, older business owners report significantly higher levels of well-being and lower levels of ill-being than younger owners. Also, female business owners experience significantly higher levels of burnout and workplace stress than male business owners.

4.4. Summary of OLS and SEM results

The results from the linear regression models and the SEM analyses show substantial consistency. Specifically, Table 4 (linear regression) and Figure 1 (SEM) both indicate that overall DRE is positively associated with psychological well-being and job satisfaction, and negatively associated with burnout and stress. Similarly, findings from Table 5 and Figure 2 reveal that the dimensions of relaxation and mastery are positively related to both well-being indicators and negatively related to both ill-being indicators.

Consistent patterns also emerge for detachment and stress across both analytic approaches. Somewhat surprisingly, detachment is negatively associated with psychological well-being and job satisfaction, and

[8] Regarding the estimated coefficients for detachment, residualisation of relaxation leads to β=-0.072, p<.001 for psychological well-being and β=-0.174, p<.001 for job satisfaction; residualisation of mastery leads to β=-0.162, p<.001 for psychological well-being and β=-0.390, p<.001 for job satisfaction; residualisation of control leads to β=-0.180, p<.001 for psychological well-being and β=-0.409, p<.001 for job satisfaction.

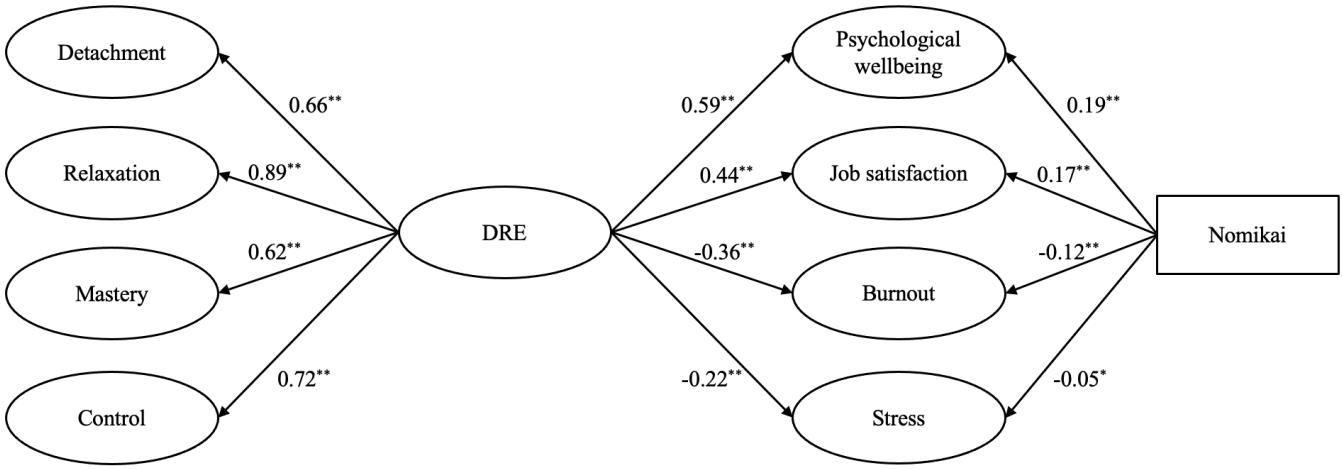
[9] Regarding the estimated coefficients for control, residualisation of relaxation leads to β=0.161, p<.001 for stress; residualisation of mastery leads to β=0.164, p<.001 for stress.

positively associated with burnout. While control exhibits the expected positive associations with both well-being outcomes, it is also positively associated with stress—again contrary to expectations.

Taken together, the findings from both the linear regression and SEM analyses support hypotheses H1a through H4a for overall DRE. When examining the specific dimensions of DRE, we find support for hypotheses H1a and H2a in the case of relaxation, mastery, and control, but not detachment. Hypotheses H3a and H4a are supported for relaxation and mastery, but not for detachment and control.

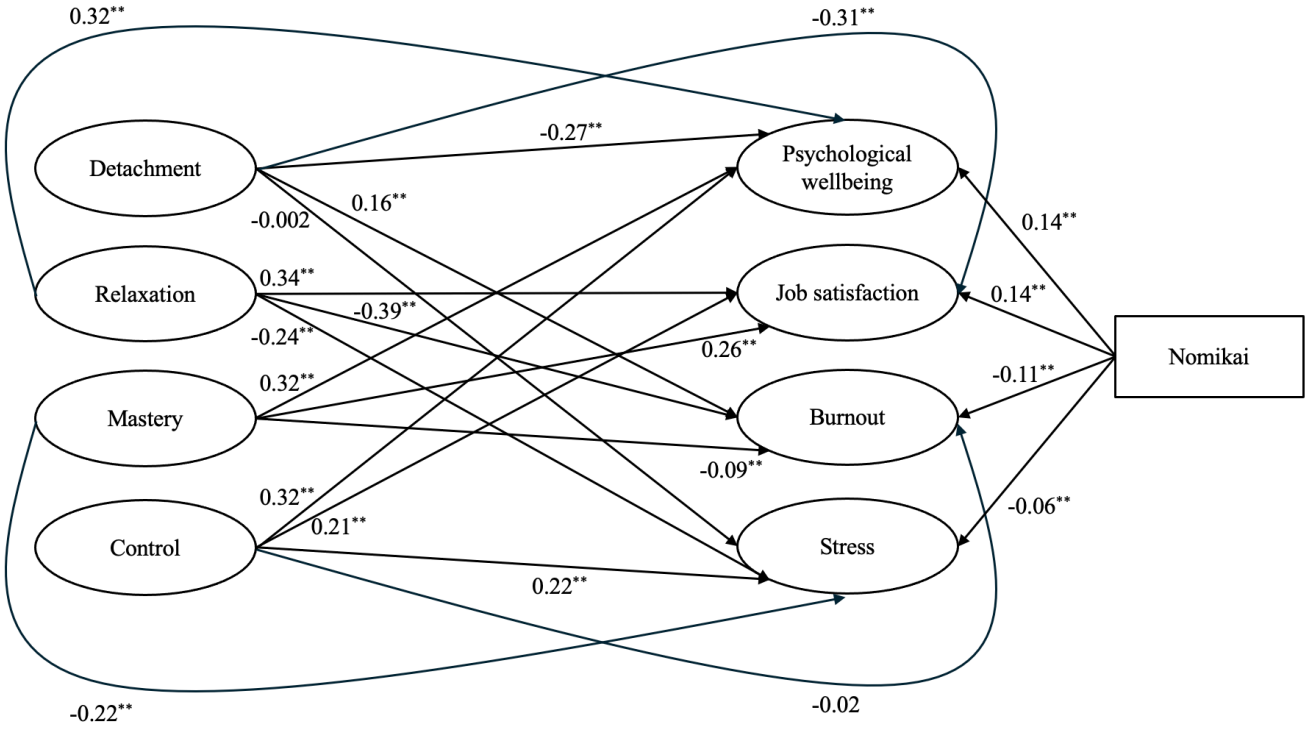
Finally, both methods yield similar conclusions regarding *nomikai* involvement. Participation in *nomikai* is positively associated with psychological well-being and job satisfaction, and negatively associated with burnout among small business owners, supporting hypotheses H1b through H3b. Additionally, the SEM analysis provides evidence that *nomikai* participation is negatively related to perceived stress among business owners, lending support for hypothesis H4b.

Figure 1. Standardized coefficients resulting from SEM analysis with DRE as a second-order construct.



Based on 2,379 observations. ** $p<.001$; * $p<.05$. Correlations among the mental health variables, and coefficients of control variables and items related to the latent variables (DRE and mental health) are not shown for brevity reasons and are available from the authors.

Figure 2. Standardized coefficients resulting from SEM analysis with direct paths from DRE dimensions to mental health.



Based on 2,379 observations. ** p<.001; * p<.05. Correlations among the DRE and mental health variables, and coefficients of control variables and items related to the latent variables (DRE and mental health) are not shown for brevity reasons and are available from the authors.

5. Discussion

Advising small business owners to work less may be useful but has little effect because they tend to develop an existential relationship with their work (Torrès et al., 2022). A promising solution to reduce the threat of burnout – or ill-being in general – may be to develop better recovery experiences. Thus, studying the link between mental health (defined both in terms of well-being and of ill-being) and recovery activities is justified by the potential benefits to both individual business owners and their environment given the role they play for their employees, suppliers, clients, and entire networks.

Small business owners and employees operate in fundamentally different work environments, which can influence the level and the effect of their recovery experiences. Small business owners often face greater autonomy but also bear considerable financial and emotional risks, with blurs boundaries between work and personal life (Blanchflower & Oswald, 1998). Also, they may experience greater demands for self-regulation and time management (Unger et al., 2011). Employees on the other hand, typically operate within more structured organizational environments, with clearer divisions between work and leisure, as well as formal recovery opportunities such as paid leave and regulated working hours (Sonnentag & Fritz, 2007). Indeed, Le Moal et al. (2025) find that small business owners have fewer recovery experiences than employees in all four DRE dimensions. However, Bennett et al. (2023) show that the recovery experiences in a sample of 247 early stage entrepreneurs are similar to that of employees; the small sample size and the specificity of early stage limits the generalizability of their outcomes. Hence, acknowledging that there are no universal recovery experiences implies that different contexts (business owner versus employee; early stage business owner vs experienced; demographic and geographic context) may lead to different results (Wach et al., 2021). Sonnentag

et al. (2022, p. 47) also note that little attention has been paid to whether the size and effect of recovery processes differs between demographic and occupational groups.

Our results clearly show that Japanese small business owners have more recovery experiences for all four dimensions than their French counterparts (Le Moal et al., 2025) which was the initial reference point for our analyses. The differences range from 0.54 for mastery to 0.74 for relaxation. There are similarities on the other hand: control has the highest score while detachment has the lowest. This pattern can also be seen in the nine studies on employees reported upon by Le Moal et al. (2025). If we compare our results for small business owners with those of Shimazu et al. (2012) for Japanese employees, we observe that the values for the four DRE dimensions are largely similar. The same conclusion goes for the US early stage entrepreneurs of Bennett et al. (2023).[10] This would suggest that the French data set is an outlier.

To establish if indeed the French small business owners are the outliers among the various datasets, we gathered information from many more datasets which we summarize in Table 5. We are particularly interested in Asians despite the warning of Sonnentag et al. (2022, p. 48) that recovery studies from Asian countries are rare. We clearly see that DRE levels for Asian employees, for European employees as well as for the US and Japanese datasets of small business owners are consistently in excess of those of the French dataset of small business owners. It is beyond the scope of the present paper to consider why this is the case.

Table 5. Overview of some studies reporting values of overall DRE and its four dimensions of the Recovery Experience Questionnaire (REQ) proposed by Sonnentag & Fritz (2007).

Study	Respondents	N	Detachment	Relaxation	Mastery	Control	Overall DRE
Shimazu et al. (2012)	Employees (Japan)	2520	3,44	3,69	3,16	3,93	3,56
Mori et al. (2024)	Employees (Japan)	1278	3,44	3,47	4,03	3,7	3,66
Panthee et al. (2020)	Employees (Nepal)	438	2,29	2,83	4,04	4,03	3,30
Hao et al.(2023)	Employees (China)	2152	3,25	3,58	2,63	3,71	3,29
Meng Xuan Zhang et al. (2022)	Employees (China)	205	2,67	4,3	3,9	4,33	3,80
Nasharudin (2023)	Employees (Malaysia)	353	2,86	3,74	3,92	3,81	3,58
Hamsyah et al. (2024)	Employees (Indonesia)	740	3,4	3,86	3,48	3,83	3,64
Unweighted average for **ASIAN** employees		7686	3,05	3,64	3,59	3,91	3,55
Kinnunen et al. (2011)	Employees (Finnish workers)	527	3,1	3,56	3,43	3,74	3,46
Virtanen et al. (2020)	Employees (Finnish teachers)	909	2,83	3,93	3,34	3,93	3,51
Kazlauskas et al. (2023)	Employees (Lithuania)	471	2,69	3,29	3,16	3,58	3,18
Almén et al. (2025)	Employees (Sweden)	481	2,44	2,35	3,5	3,48	2,94
Albulescu et al. (2024)	Employees (Romania)	264	3,05	3,85	3,48	3,9	3,57
Collen et al. (2019)	Employees (Dutch nurses)	323	2,89	3,26	3,00	3,64	3,19
Collen et al. (2019)	Employees (Turkish nurses)	333	2,89	3,44	3,49	3,72	3,38
Nine studies (Le Moal et al., 2024b)	Employees (various countries)	3158	3,00	3,60	3,42	3,73	3,44
Unweighted average for **EUROPEAN** employees		6466	2,86	3,41	3,35	3,71	3,33
The present study	Small business owners (Japan)	2458	3,05	3,54	3,47	3,88	3,49
Bennet et al. (2023)	Small business owners (US)	247	2,84	3,79	3,63	4,00	3,57
Le Moal et al. (2024b)	Small business owners (France)	1043	2,29	2,87	3,01	3,32	2,87
Unweighted average for small business owners		3748	2,73	3,40	3,37	3,73	3,31

Two conclusions can now be drawn. *First*, the level of overall DRE (unweighted average of all four dimensions) of our dataset of Japanese business owners is comparable to that of Japanese employees, US early stage entrepreneurs and a large collection of employee studies (Table 5). The exception is the French dataset of Le Moal et al. (2025) with a considerably lower value for overall DRE. Assuming that there is some specific reason for the low values in French business owners, it is fair to conclude that, in general, DRE levels for small business owners are not different from those for employees. This is a surprising finding because small business owners and employees operate in fundamentally different work environments.

[10] Values in Bennet et al. (2023) with mainly young businesses are somewhat larger for 3 out of 4 dimensions. Also in our sample, we find that business owners of young businesses have higher values for each dimension than business owners of older businesses.

Second, consistently and irrespective of the context, detachment shows the lowest and control the highest level among the four DRE dimensions. This is true for the three small business owners' datasets (of Table 5) as well for the majority of the employee datasets. Several reasons are mentioned for the low values of detachment (= refraining from job-related activities while mentally "switching off" during non-job hours) for employees: information and communication technology (ICT) use at home for work purposes (Barber & Jenkins, 2014), curvilinearity of the effect of detachment (Fritz et al., 2010), difficulty of "switching on" after detachment (Shimazu et al., 2012), non-work hassles and household chores (Demerouti, Bakker & Sanz-Vergel, 2013), the *nomikai* effect (Shimazu et al., 2012; Hu et al., 2014) and job stressors leading to low levels of detachment (Sonnentag & Fritz, 2015). Control is close to the concept of autonomy (which refers to being able to decide on one's after-work schedule and activities) and stands above the other three dimensions because it enables choice, generates psychological resources, and acts as a stable platform upon which relaxation and mastery can be built (Newman et al., 2014). This would justify the high level of control.

The justifications mentioned in the previous paragraph may be valid for small business owners as well. Next to these justifications there may be specific arguments for small business owners: existentialism (Le Moal et al., 2025) and entrepreneurial passion (Bennett et al. (2023) are mentioned as reasons which make it difficult to mentally detach, and control-oriented work-style spilling over to non-work activities (Le Moal et al., 2025) as a reason for control to be high. The similarity between business owners and employees in terms of empirical outcomes is again striking. A first remark could be that the effect of existentialism and passion for small business owners is not so strong that their level of detachment is lower than that of employees. Alternatively, existentialism and passion also play a role for employees and keep their detachment low. Lastly, there is the option of a psychological state at the intersection of workaholism and work engagement: highly engaged employees, like entrepreneurs, are driven by the fulfilment and meaning that work provides (Shimazu et al., 2012), reducing the perceived need for detachment. Existential values, passionate involvement, and East-Asian collectivist culture (Yuki, 2003; Hu et al., 2014) may thus contribute to low detachment in both groups, warranting further research across occupational contexts.

We find support for all our hypotheses (H1a through H4b). The quality of DRE is positively related to our two measures of well-being (psychological well-being and job satisfaction) and negatively related to our two measures for ill-being (perception of burnout and stress). The same holds true for *nomikai*. The results for DRE are not surprising since there is a large amount of material showing the same for employees irrespective of the context, and the results for French small business owners (Le Moal et al., 2025) show the same for psychological well-being and burnout.

The results for *nomikai* are very interesting since they are novel. The effects of *nomikai* in the workplace on the well-being, job satisfaction, burnout and stress of managers/owners have rarely been examined (Hagihara et al., 2000). In this sense, the finding that holding *nomikai* has a positive impact on the well-being of managers/owners provides important insights and implications for future management practices.

Nomikai can be considered a potential source of social support in the workplace. Garmendia et al. (2023) revealed that social support contributes to increased job satisfaction and reduced emotional exhaustion, and that relaxation is a crucial mediator in this relationship. In East Asian cultures, where behaviour is supported by interpersonal networks among members (Yuki, 2003), *nomikai* aligns with the unique East-Asian values of deepening interpersonal knowledge, strengthening a sense of personal connection, and maintaining group harmony (Yuki, 2003).

Therefore, it can be hypothesized that comfortable social interaction and cooperative atmosphere gained through *nomikai* lead to a state of psychological relaxation for employees (Garmendia et al. (2023), which in turn promotes mental well-being for the business owner. This may offer a new perspective on existing recovery models, given that relaxation is achieved within a workplace social context.

Furthermore, the positive effects of *nomikai* demonstrated in this study should be recognized as a unique practice for maintaining mental health in collectivistic cultures. While traditional well-being strategies often focus on individual recovery (DRE), the findings highlight the potential for culturally embedded social

interaction opportunities to contribute to employee well-being. Managers could, therefore, actively encourage informal social gatherings like *nomikai* to create a playful environment (Mukerjee et al., 2025) where employees feel comfortable and relaxed, thereby increasing the likelihood for employees of supporting each other, developing novel and creative ideas and adopting healthier coping strategies.

Moreover, the link between *nomikai* and mental health seems to be independent of that between DRE and mental health. It may be that these links represent the entirely different perspectives of social recovery and interpersonal harmony/cohesion. While DRE covers individual psychological recovery, *nomikai* may facilitate well-being through relational or cultural aspects such as perceived inclusion, team trust through psychological safety (Edmondson, 1999), or social identity reinforcement, particularly in collectivist work cultures like Japan. (Hofstede, 1980). More research is certainly required. The good news is that studies of the link between DRE and mental health can be compared irrespective of whether *nomikai* is taken into account or not.

Partitioning overall DRE in its four dimensions leads to some interesting results (Table 5). Detachment seems to have a perverse effect on well-being and no effect on stress. The weak influence of detachment activities on mental health is also noted in the two earlier studies concerning small business owners. In Le Moal et al. (2025) reference is made to the concept of existentialism. In Bennet et al. (2023) it is noted that entrepreneurial passion may be at odds with wanting to detach. Small business owners do not devote much time to detachment: the deep emotional and cognitive involvement of owners with their business makes it difficult to mentally disconnect.[11] And when they do disconnect, it does not seem to lead to affect mental health: the unique demands and responsibilities inherent to small business ownership diminish the effectiveness of this recovery dimension. The Japanese data show us even more. Detachment activities do not reduce ill-being, and even have a perverse effect on well-being. This may be explained as follows: high levels of well-being due to whatever determinant may lead to a low inclination of wanting to "switch off" after working hours into a detachment mode, that is, refraining from job related activities or thoughts. Professional success as a business owner may be such a determinant and also a direct determinant for this low inclination. Another confounder may be work engagement. Shimazu et al. (2012) show that the level of detachment of Japanese workers was negatively correlated to their work engagement. They mention that "switching on" after detachment may impair work engagement. It may also be that a high level of work engagement lowers the need to detach. So, direct and confounding effects may be at play here. These reasonings are very close to the stressor-detachment model for employees which posits that the difficulty to detach goes up according to the level of job stressors (Sonnentag & Fritz, 2015). See Sonnentag et al. (2022) for more sources of the negative link between job stressors and recovery experiences. The question remains why we only find this negative link for the detachment dimension. In sum, the existentialism/passion effect may not be represented by a low level of detachment experiences but rather by a perverse effect of these experiences on mental health. There is much room for further research on the measurement and role of existentialism/passion on mental health moderated by DRE.

A second surprising result of partitioning overall DRE in its four dimensions is the positive link between control and stress. Above, we already established that it is unlikely that multicollinearity is at play here. Our assumption about this surprising effect is based upon the effect of stress on control. The reasoning would run as follows: stress perception triggers coping efforts including re-establishing control, in the hope that these efforts directly buffer stress and elevate well-being. This is a well-established phenomenon in psychology: when individuals perceive heightened stress, they often respond by seeking greater control—whether through actions or cognitive shifts—to reduce that stress. For instance, Bandura (1977) with his self-efficacy theory and Lazarus & Folkman (1987) with their transactional theory on stress and coping, lay the ground for this phenomenon. In our data, we find no link between burnout and control. So, the question then arises why the perception of burnout does not trigger this coping mechanism as much as the perception of stress does. We have to bear in mind that, while stress is perceived as a temporary state, burnout is a deeper more persistent state (Cartwright & Cooper, 1997). Probably, control experiences may be perceived as insufficient in cases of threat of burnout. An obvious question is whether the mechanisms of coping by resorting to control in cases of high levels of

[11] Being a founder and percentage of ownership can be viewed as proxies of involvement. Indeed, both phenomena (percentage of ownership is not available for the entire data set) correlate positively with all four DRE dimensions. Correlations with detachment are the lowest.

perceived stress and burnout are similar for small owners as for employees. Follow-up research may answer this question.

We use many controls in our analyses on the link between mental health and DRE for which we did not make a priori hypotheses about their effects. Controlling for many factors in general may provide credibility while establishing such a link. Additional credibility is given if the controls behave according to what is known from the literature. Below, we will only discuss some effects. *Gender differences* can influence mental health due to the greater work–family conflict situations for women than for men. 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). In our analysis women show higher levels of ill-being than men. We use *age* as a control because as people grow older, they often report greater mental health. A recent example of such a report is Kibler et al. (2024) which show that entrepreneurs experience less emotional exhaustion due to their enhanced psychological capital and because they apply less entrepreneurial strategies which focus on the creation of new market opportunities and the development of new products and services.[12] In our analysis age has the expected relationships with all four measures of mental health, that is, older business owners experience more well-being, and less ill-being, than younger business owners. We use *life partner* because recent research show that a life partner contributes positively to the life satisfaction of entrepreneurs and wage earners (El Shoubaki and Stephan, 2018). We find that having a life partner significantly reduces ill-being. See also Park and Fritz (2015) for an analysis about spousal recovery support. Being a *founder* or having taken a business is reported to influence not just the success of a business but also the mental health of the owner (Honjo & Kato, 2022). We find a positive relationship between being a founder and job satisfaction, but non-significant associations for the other outcomes. When focusing on Table 5, we hardly find any effects for *manager experience*, *business size*, *business age*, and *family business*. We controlled for six levels of education and 47 so-called prefectures (=regions). We refrain from interpreting the size, sign and significance of these coefficients.

By and large, the effects of the controls are as expected, not relevant or simply zero. This provides confidence in our results. However, there is one exception: *industry experience* has a positive relationship with well-being but also with stress. First, we could not find studies reporting effects on industry-specific experience on mental health. However, a broad study (Jara-Figueroa et al., 2018) found that industry-specific experience positively predicts start-up survival, as owners benefit from valuable domain knowledge. Supposing that such knowledge may reduce cognitive/strategic stress due to domain mastery, it is fair to assume that industry experience positively influences mental health. Why it then also positively influences stress remains unclear. However, two, somewhat speculative, research avenues are worth mentioning here. *First*, the cognitive entrenchment perspective of Dane (2010) which suggests that flexibility decreases with increasing domain expertise. Decreasing flexibility may impact perceptions of stress. *Second*, increasing domain experience may relate to feelings of positive stress. For instance, see O'Sullivan (2011).

Several shortcomings of the present study are worth mentioning. *First*, while sleep is widely recognized as a fundamental component of recovery, our study specifically focuses on psychological recovery experiences, which are directly influenced by entrepreneurs' choices and behaviours during their free time. Sleep can also be a consequence of recovery experiences. The dynamics between DRE, sleep (repairing and consolidating memories, cells and the immune system) and mental health are subject worth investigating. *Second*, our cross-sectional research does not allow for disclosing the temporal or bi-directional dynamics between DRE and mental health. The stressor-detachment model (Sonnentag & Fritz, 2014) which we mentioned above, and which suggests that detachment impairment goes up according to the level of job stressors, is just one of the examples of a reversed causality which we cannot consider. Also mentioned above are the effects of stress on control and of control on other dimensions of DRE. These dynamic effects are not modelled and definite candidates for further research (Sonnentag, 2018). In particular, detachment and control are candidates for further investigation using longitudinal data and more refined modelling. *Third*, the effect of life partners at

[12] Separate regressions for three age groups (<49 years; 49 to 67 years; >67 years) do not show important differences. There is some evidence of a smaller negative coefficient for detachment among the oldest individuals.

home and professional partners at work is ignored and worth investigating. We observed in our analysis that having a life partner is good for mental health in all four measures, but the dynamics of partnership are probably more complicated than that they can be modelled as a control. For instance, see Park and Fritz (2015).

We conclude our discussion section with some remarks about intervention strategies for small business owners. There is much literature about it in general (Hahn et al., 2011; Sonnentag et al. 2017 and 2022). Several intervention strategies have already been suggested to enhance DRE among small business owners. Le Moal et al. (2025) refer to Williamson et al. (2021). They point at a cocktail of activities aiming at respite (taking breaks from work for tangible relief through activities such as spending time in nature, socializing, and listening to music), at mental relief (mindfulness and positive reflections), at reappraisal (cognitive–behavioural therapy, stress optimization, positive thinking, and experimental disclosure), and at fostering structure (sleep hygiene, exercise routines, and regular breaks). Given our findings, we would put less emphasis on respite and more on reappraisal, since respite is close to detachment (which plays hardly a role) and reappraisal is close to control (which plays a major role both directly and through its possible influence on the other dimensions of DRE).

6. Conclusion

Daily recovery experiences (DRE) are crucial in helping individuals repair their mood and regain energy depleted during work (Sonnentag et al., 2017). There are many studies showing their role for employees' mental health. Le Moal et al. (2025) investigate their role for some 1000 French small business owners' mental health. Bennett et al. (2023) did a similar investigation for a small sample of 247 US early-stage entrepreneurs, which may not representative for the entire population of small business owners. Other recent studies have limitations too: Battisti et al. (2025) primarily examined resilience, while Obschonka et al. (2023) only addresses psychological detachment. The common denominator however, is that all these studies show that DRE are crucial for small business owners' mental health (irrespective of the way it is measured).

The present study uses a survey of some 2,400 Japanese small business owners. It uses two well-being measures (psychological well-being and job satisfaction) and two ill-being measures (burnout and stress). Moreover, it uses the four DRE dimensions (detachment, relaxation, mastery and control) as well as *nomikai* (飲み会), a specific Japanese custom of regularly getting together after office hours, as a 'competitor to DRE' investigating their links with the two well-being and the two ill-being measures.

The results are clear and mostly strong. They support our replication and extension strategy: results are in line with the literature and when not, they lead to novel insights. *First*, we find that the average values of the four recovery dimensions are mostly in line with those found in many other studies, both of employees and of small business owners (with the exception of French small business owners who show lower values of DRE). *Second*, we find that experiences of detachment after work have the lowest scores among the four daily recovery dimensions for Japanese small business owners. The same result is found in practically all other studies concerning both employees and small business owners. Many reasons are suggested for this phenomenon. The most compelling is a high level of emotional and cognitive involvement which is at odds with detachment experiences. For small business owners this may be called entrepreneurial passion (Bennett et al. (2023) or existentialism (Le Moal et al., 2025). *Third*, controlling for many phenomena including participating in *nomikai*, we show that for Japanese small business owners, the quality of overall daily recovery experiences is positively linked to psychological well-being and job satisfaction, and negatively to burnout and stress. This is fully in line with existing literature for employees as well as small business owners. *Fourth*, *nomikai* activities of the owner are positively linked to psychological well-being and job satisfaction, and negatively to burnout and stress. Its role seems to be independent of that of the quality of overall daily recovery experiences. This novel result points at a situation which one often encounters in Japan studies (Hagihara et al., 2000): universal behaviour (influence of DRE) as well as specific Japanese customs (*nomikai*) are both relevant. *Fifth*, we find that the detachment dimension is negatively correlated with psychological well-being and job satisfaction, while the other three dimensions show the expected positive links. This points again at an existentialist interpretation where detachment is ineffective or even detrimental to the entrepreneurial drive. It

can also point at a strong obligation to keep working beyond office hours leading to feelings of guilt if one doesn't. *Sixth*, the control dimension does not show the expected negative link with stress while the other three dimensions show the negative link. This can be explained by a reversed causality effect: high stress levels may hamper the inclination to strive for autonomy during leisure time.

Taken together, we contributed to the large literature of small business owners' health in that we point at an antecedent which has been largely overlooked. We expect that daily recovery experiences (or other recovery activities) will become an essential element in small business owners' health studies from now on. We contributed to the equally large literature of DRE showing that small business owners are hardly different from employees and that Japanese employees and small business owners are hardly different from their counterparts elsewhere. This was not our initial expectation given the distinctive roles owners and employees play in their business and beyond and given the peculiarities of Japanese (business) culture. We aimed to contribute to recent calls for more replication exercises by continuously confronting our results to earlier ones concerning employees and small business owners.

References

Althammer, S. E., Reis, D., Beek, S., Beck, L., & Michel, A. (2021). A mindfulness intervention promoting work–life balance: How segmentation preference affects changes in detachment, well-being, and work–life balance. *Journal of Occupational and Organizational Psychology*, 94(2), 282-308. https://doi.org/10.1111/joop.12346

Baum-Baicker, C. (1985). The psychological benefits of moderate alcohol consumption: a review of the literature. *Drug and Alcohol Dependence*, 15(4), 305-322.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 84(2), 191-215.

Barber, L. K., & Jenkins, J. S. (2014). Creating technological boundaries to protect bedtime: Examining work-home boundary management, psychological detachment and sleep. *Stress and Health*, 30, 259–264. https://doi.org/10.1002/smi.2536.

Battisti, M., Gish, J. J., Hatak, I., & Zhou, H. (2025). Establishing a recovery menu to increase the resilience of entrepreneurs. *British Journal of Management*, 36(1), 56-72. https://doi.org/10.1111/1467-8551.12827

Belloni, M., Carrino, L., & Meschi, E. (2022). The impact of working conditions on mental health: Novel evidence from the UK. *Labour Economics*, 76, 102176. https://doi.org/10.1016/j.labeco.2022.102176

Bennett, A. A., Lanivich, S. E., Lyons, L. M., & Zhou, F. (2025). An effort-recovery model for early-stage entrepreneurs' work demands: The role of recovery experiences. *Journal of Small Business and Entrepreneurship*, 37(2), 173-197. https://doi.org/10.1080/08276331.2023.2293665

Blanchflower, D. G., & Oswald, A. J. (1998). What Makes an Entrepreneur? *Journal of Labor Economics*, 16(1), 26-60. https://doi.org/10.1086/209881

Block, J.H., Fisch, C., Kanwal, N. Lorenzen, S., & Schulze, A. (2022). Replication studies in top management journals: An empirical investigation of prevalence, types, outcomes, and impact. *Management Review Quarterly,* 73, 1109-1134. https://doi.org/10.1007/s11301-022-00269-6

Breevaart, K., Bakker, A. B., Derks, D., & Van Vuuren, T. C. V. (2020). Engagement during demanding workdays: A diary study on energy gained from off-job activities. *International Journal of Stress Management*, 27(1), 45-52. https://doi.org/10.1037/str0000127

Brieger, S. A. Sonbol, D. and De Clercq, D. (2024), Gender differences in entrepreneurs' work–family conflict and well-being during COVID-19: Moderating effects of gender-egalitarian contexts, *Journal of Small Business Management*, 62(5), 2322-2363. https://doi.org/10.1080/00472778.2023.2235755

Brosseau, L. M., Fredrickson, A. L., & Casey, M. A. (2007). Small business owners' opinions about written health and safety information. *Industrial Health*, 45(2), 209-216. https://doi.org/10.2486/indhealth.45.209

Cammann, C. Fichman, M. Jenkins, D. and Klesh, J. (1979). The Michigan organizational assessment questionnaire, Unpublished manuscript, University of Michigan, Ann Arbor.

Cartwright, S. & Cooper, C. L. (1997). Managing workplace stress. Sage Publications: Thousand Oaks, USA.

Cooper, C. L., & Lu, L. (2016). Presenteeism as a global phenomenon: Unraveling the psychosocial mechanisms from the perspective of social cognitive theory. *Cross Cultural & Strategic Management*, 23(2), 216–231. https://doi.org/10.1108/CCSM-09-2015-0106

Culbertson, S. S. Fullagar, C. J., and Mills, M. J. (2010). Feeling good and doing great: The relationship between psychological capital and well-being. *Journal of Occupational Health Psychology*, 15(4), 421–433.
Dane, E. (2010). Reconsidering the trade-off between expertise and flexibility: a cognitive entrenchment perspective. *Academy of Management Review*, 25(4), 579-603.
Demerouti, E., Bakker, A. B., & Sanz-Vergel, A. I. (2013). Recovery and work-life interface. In: Handbook of work-life integration among professionals (Eds Major, D.A. & Burke, R. J.). Edward Elgar Publishing: Cheltenham UK. 225-244.
Diamond, J., Watanabe, K., & Watanabe, T. (2020). The formation of consumer inflation expectations: new evidence from Japan's deflation experience. *International Economic Review*, 61(1), 241-281.
Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly,* 44(2), 350-383. https://doi.org/10.2307/2666999
El Shoubaki, A. & Stephan, M. (2018). The life partner and the life satisfaction of the entrepreneur. *Central European Business Review*, 7(3), 26-41.
Fazia, T., Bubbico, F., Nova, A., Buizza, C., Cela, H., Iozzi, D., Calgan, B., Maggi, F., Floris, V., Sutti, I., Bruno, S., Ghilardi, A., & Bernardinelli, L. (2023). Improving stress management, anxiety, and mental well-being in medical students through an online Mindfulness-Based Intervention: A randomized study. *Scientific Reports*, 13(1), 8214. https://doi.org/10.1038/s41598-023-35483-z
Fritz, C., Yankelevich, M., Zarubin, A., & Barger, P. (2010). Happy, healthy, and productive: The role of detachment from work during nonwork time. *Journal of Applied Psychology*, 95(5), 977-983. https://doi.org/10.1037/a0019462
García, C. B., Salmerón, R., García, C., & García, J. (2020). Residualization: justification, properties and application. *Journal of Applied Statistics*, 47(11), 1990-2010. https://doi.org/10.1080/02664763.2019.1701638
Garmendia, P., Fernández-Salinero, S., Holgueras González, A. I., & Topa, G. (2023). Social support and its impact on job satisfaction and emotional exhaustion. *European Journal of Investigation in Health, Psychology and Education,* 13(12), 2827–2840. https://doi.org/10.3390/ejihpe13120195
Gobel, M. S., & Miyamoto, Y. (2024). Self-and other-orientation in high rank: A cultural psychological approach to social hierarchy. *Personality and Social Psychology Review*, 28(1), 54-80.
Guiliani, F., & Torrès, O. (2018). Entrepreneurship: An insomniac discipline? An empirical study on SME owners/directors. *International Journal of Entrepreneurship and Small Business*, 35(1), 81-101. https://doi.org/10.1504/IJESB.2018.10015455
Hagihara, A., Tarumi, K., & Nobutomo, K. (2000). Work stressors, drinking with colleagues after work, and job satisfaction among white-collar workers in Japan. *Substance Use & Misuse*, 35(5), 737-756.
Hahn, V.C., Binnewies, C., Sonnentag, S., & Mojza, E.J. (2011). Learning how to recover from job stress: effects of a recovery training program on recovery, recovery-related self-efficacy, and well-being. *Journal Occupational Health Psychology*, 16(2), 202-16. https://doi.org/10.1037/a0022169
Hofstede, G. (1980). Culture and organizations. *International Studies of Management & Organization, 10*(4), 15–41.
Honjo, Y., & Kato, M. (2021). Are founder-CEOs resilient to crises? The impact of founder-CEO succession on new firm survival. *International Small Business Journal*, 40(2), 205-235. https://doi.org/10.1177/02662426211050794
Hu, Q., Schaufeli, W. B., Taris, T. W., Hessen, D. J., Hakanen, J., Salanova, M., & Shimazu, A. (2014). "East is East and West is West and never the twain shall meet:" Work engagement and workaholism across Eastern and Western cultures. *Journal of Behavioral and Social Sciences,* 1(1), 6–24.
Hunter, C., Jemielniak, D., & Postuła, A. (2010). Temporal and spatial shifts within playful work. *Journal of Organizational Change Management*, 23(1), 87-102. https://doi.org/10.1108/09534811011017225
Jara-Figueroa, C., Jun, B., Glaeser, E.L. & Hidalgo, C.A. (2018) The role of industry-specific, occupation-specific, and location-specific knowledge in the growth and survival of new firms. *Proceedings of the National Academy of Sciences*, 115(50), 12646-12653. https://doi.org/10.1073/pnas.1800475115
Kamerāde, D., Wang, S., Burchell, B., Balderson, S. U., & Coutts, A. (2019). A shorter working week for everyone: How much paid work is needed for mental health and well-being? *Social Science & Medicine*, 241, 112353. https://doi.org/10.1016/j.socscimed.2019.06.006
Kibler, E., Sirén, Ch., Maresch, D., Salmivaara, V. & Fink, M. (2024). Aging and entrepreneurs' emotional exhaustion: The role of entrepreneurial strategy, psychological capital, and felt age gap. *Journal of Business Venturing*, 39(5), 106418. https://doi.org/10.1016/j.jbusvent.2024.106418
Kikuchi, J., Nagao, R., & Nakazono, Y. (2023). Expenditure responses to the COVID-19 pandemic. *Japan and the World Economy*, 65, 101174.

Kobayashi T, Suzuki E, Oksanen T, Kawachi I, & Takao S (2014) The Bright Side and Dark Side of Workplace Social Capital: Opposing Effects of Gender on Overweight among Japanese Employees. *PLoS ONE* 9(1), e88084. https://doi.org/10.1371/journal.pone.0088084

Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality*, 1, 141–169. https://doi.org/10.1002/per.2410010304

Le Moal, M., Thurik, A.R., Torrès, O. & Soenen, G. (2025), Mental health of entrepreneurs and daily recovery experiences. *Small Business Economics*, forthcoming. https://doi.org/10.1007/s11187-025-01087-2

Malach-Pines, A. (2005). The burnout measure, short version. *International Journal of Stress Management*, 12(1), 78-88. https://doi.org/10.1037/1072-5245.12.1.78

Mangione, T. W., Howland, J., Amick, B., Cote, J., Lee, M., Bell, N., & Levine, S. (1999). Employee drinking practices and work performance. *Journal of Studies on Alcohol*, 60(2), 261-270.

Motohashi, H., Fujimoto, A., Sakane, T., Yamamoto, M., & Yano, Y. (2013). A study on social factors related to mental disorders and suicide: Understanding the current state of mental disorders through a prefectural-level analysis. *Yakugaku Zasshi (Journal of the Pharmaceutical Society of Japan),* 133(11), 1235–1241.

Motowidlo, S. J. Packard, J.S. and Manning, M.R. (1986). Occupational stress: its causes and consequences for job performance. *Journal of Applied Psychology*, 71(4), 618-629.

Mukerjee, J., Thurik, A.R., Torrès, O., & Zwan, P. van der (2025). The role of entrepreneurial play in well-being of small business owners. forthcoming.

Newman, D.B., Tay, L. & Diener, E. (2014). Leisure and subjective well-being: A model of psychological mechanisms as mediating factors. *Journal of Happiness Studies,* 15, 555–578. https://doi.org/10.1007/s10902-013-9435-x

Obschonka, M., Pavez, I., Kautonen, T., Kibler, E., Salmela-Aro, K., & Wincent, J. (2023). Job burnout and work engagement in entrepreneurs: How the psychological utility of entrepreneurship drives healthy engagement. *Journal of Business Venturing*, 38(2), 106272. https://doi.org/10.1016/j.jbusvent.2022.106272

O'Sullivan, G. (2011). The relationship between hope, eustress, self-efficacy, and life satisfactionamong undergraduates. Social Indicators Research, 101, 155-172.

Park, Y. A., & Fritz, C. (2015). Spousal recovery support, recovery experiences, and life satisfaction crossover among dual-earner couples. *Journal of Applied Psychology*, 100(2), 557–566. https://doi.org/10.1037/a0037894

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.

Ryff, C. D. (1989), Happiness is everything, or is it? Explorations on the meaning of psychological well-being, *Journal of Personality and Social Psychology*, 57, 1069–1081.

Scott, A. J., Webb, T. L., Martyn-St James, M., Rowse, G., & Weich, S. (2021). Improving sleep quality leads to better mental health: A meta-analysis of randomised controlled trials. *Sleep Medicine Reviews*, 60, 101556. https://doi.org/10.1016/j.smrv.2021.101556

Shimazu, A., Sonnentag, S., Kubota, K., & Kawakami, N. (2012). Validation of the Japanese version of the recovery experience questionnaire. *Journal of Occupational Health*, 54(3), 196-205. https://doi.org/10.1539/joh.11-0220-OA

Singh, V., Udmale, S. S., Pandey, A. K., & Singh, S. K. (2021). IoT for health insurance companies. In *IoT-based data analytics for the healthcare industry* (Eds S.K. Singh, R.S. Singh, A.K. Pandey, S.S. Udmale, A. Chaudhary) (pp. 139-147). Academic Press. https://doi.org/10.1016/B978-0-12-821472-5.00008-9

Sonnentag, S. (2001). Work, recovery activities, and individual well-being: A diary study. *Journal of Occupational Health Psychology*, 6(3), 196-210.

Sonnentag, S., Venz, L., & Casper, A. (2017) Advances in recovery research: What have we learned? What should be done next? *Journal of Occupational Health Psychology*, 22(3), 365-380. https://doi.org/10.1037/ocp0000079

Sonnentag, S. (2018). The recovery paradox: Portraying the complex interplay between job stressors, lack of recovery, and poor well-being. *Research in Organizational Behavior*, 38, 169-185. https://doi.org/10.1016/j.riob.2018.11.002

Sonnentag, S., & Bayer, U.-V. (2005). Switching off mentally: Predictors and consequences of psychological detachment from work during off-job time. *Journal of Occupational Health Psychology*, 10(4), 393-414. https://doi.org/10.1037/1076-8998.10.4.393

Sonnentag, S., Cheng, B. H., & Parker, S. L. (2022). Recovery from work: Advancing the field toward the future. *Annual Review of Organizational Psychology and Organizational Behavior*, 9(1), 33-60. https://doi.org/10.1146/annurev-orgpsych-012420-091355

Sonnentag, S., & Fritz, C. (2007). The recovery experience questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology*. 12(3), 204-221. https://doi.org/10.1037/1076-8998.12.3.204

Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor-detachment model as an integrative framework: The stressor-detachment model. *Journal of Organizational Behavior*, 36, S72-S103. https://doi.org/10.1002/job.1924
Sonnentag, S., Mojza, E. J., Demerouti, E., & Bakker, A. B. (2012). Reciprocal relations between recovery and work engagement: The moderating role of job stressors. *Journal of Applied Psychology*, 97(4), 842-853. https://doi.org/10.1037/a0028292
Sørensen, B. M., & Spoelstra, S. (2012). Play at work: Continuation, intervention and usurpation. *Organization*, 19(1), 81-97. https://doi.org/10.1177/1350508411407369
Stephan, U. (2018). Entrepreneurs' mental health and well-being: A review and research agenda. *Academy of Management Perspectives*, 32(3), 290-322.
Stephan, U., & Roesler, U. (2010). Health of entrepreneurs versus employees in a national representative sample. *Journal of Occupational and Organizational Psychology*, 83(3), 717-738. https://doi.org/10.1348/096317909X472067
Stephan, U., Zbierowski, P., Pérez-Luño, A., Wach, D., Wiklund, J., Alba Cabañas, M., ... & Zahid, M. M. (2023). Act or wait-and-see? Adversity, agility, and entrepreneur wellbeing across countries during the Covid-19 pandemic. *Entrepreneurship Theory and Practice*, 47(3), 682-723.
Torrès, O., Guiliani, F., & Thurik, R. (2022). Entrepreneurship and health: An existential perspective. *Revue de l'Entrepreneuriat*, Vol. 21 (HS2), 11-32.
Torrès, O., & Thurik, R. (2019). Small business owners and health. *Small Business Economics*, 53(2), 311-321. https://doi.org/10.1007/s11187-018-0064-y
Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*, 26(3), 341-358. https://doi.org/10.1016/j.jbusvent.2009.09.004
Van Witteloostuijn, A., Dejardin, M., & Pollack, J. M. (2021). Replication in entrepreneurship. *Journal of Business Venturing Insights*, 16, 1-5.
Voglino, G., Savatteri, A., Gualano, M. R., Catozzi, D., Rousset, S., Boietti, E., Bert, F., & Siliquini, R. (2022). How the reduction of working hours could influence health outcomes: A systematic review of published studies. *BMJ Open*, 12(4), e051131. https://doi.org/10.1136/bmjopen-2021-051131
Wach, D., Stephan, U., Weinberger, E., & Wegge, J. (2021). Entrepreneurs' stressors and well-being: A recovery perspective and diary study. *Journal of Business Venturing*, 36(5), 106016. https://doi.org/10.1016/j.jbusvent.2020.
Wiklund, J., Hatak, I., Lerner, D. A., Verheul, I., Thurik, R., & Antshel, K. (2020). Entrepreneurship, clinical psychology, and mental health: An exciting and promising new field of research. *Academy of Management Perspectives*, 34(2), 291-295. https://doi.org/10.5465/amp.2019.0085
Williamson, A. J., Gish, J. J., & Stephan, U. (2021). Let's focus on solutions to entrepreneurial ill-being! Recovery interventions to enhance entrepreneurial well-being. *Entrepreneurship Theory and Practice*, 45(6), 1307-1338. https://doi.org/10.1177/10422587211006431
World Economic Forum (2022). *Global gender gap report 2022*. https://www.weforum.org/publications/global-gender-gap-report-2022/ (accessed July 9, 2025).
Yuki, M. (2003). Intergroup comparison versus intragroup relationships: A cross-cultural examination of social identity theory in North-American and East-Asian cultural contexts. *Social Psychology Quarterly*, 66(2), 166–183. https://doi.org/10.2307/1519846