

---

## **Stressors and satisfactors in entrepreneurial activity: an event-based, mixed methods study predicting small business owners' health**

---

Thomas Lechat

University of Montpellier (LABEX Entreprendre),  
Observatoire AMAROK, 429 rue de l'industrie,  
34 000, Montpellier, France  
Email: observatoire-amarok@sfr.fr

Olivier Torrès\*

University of Montpellier (LABEX Entreprendre)  
Observatoire AMAROK, 429 rue de l'industrie,  
34 000, Montpellier, France  
and  
Montpellier Business School, France  
Email: o.torres@montpellier-bs.com  
\*Corresponding author

**Abstract:** Entrepreneurial activity leads to certain events that can impact both the equilibrium of a small business and that of its owner-manager. Although the health of the owner-manager is a key asset for a small organisation, the characteristics of the events he experiences and his psychological reaction to these episodes remain underexplored. This paper aims to address these research gaps, which are common to both occupational health and entrepreneurship, two fields that are rarely combined. We conducted a mixed methods study using a panel of 357 small business owners-managers. First, a qualitative longitudinal survey was administered to semantically categorise the most salient events experienced by the owners. Next, a quantitative, cross-sectional questionnaire was administered to weight the coded events through two mediating constructs: stress and satisfaction. Finally, we assessed the events' effects on the owners' health variances through linear regressions. Conceptually, our results extend the affective events theory to small business owners. Methodologically, we offer two checklists of events that capture emotional stress and satisfaction in entrepreneurial activity. Practically, certain preventive actions by medical professionals can build upon these checklists' predictive qualities regarding health. These checklists, referred to as a 'stressometer' and a 'satisfactometer', are also benchmarking tools for any self-employed.

**Keywords:** health; mixed methods; event; entrepreneurial activity; stress; satisfaction; small business owner.

**Reference** to this paper should be made as follows: Lechat, T. and Torrès, O. (xxxx) 'Stressors and satisfactors in entrepreneurial activity: an event-based, mixed methods study predicting small business owners' health', *Int. J. Entrepreneurship and Small Business*, Vol. X, No. Y, pp.xxx-xxx.

**Biographical notes:** Thomas Lechat is an Assistant Professor at the University of Montpellier (LABEX Entreprendre).

Olivier Torrès is a Professor of Small Business Management at the University of Montpellier and an Associate Researcher at Montpellier Business School in France. He is also the President of the Association Internationale de Recherche en Entrepreneuriat et PME (AIREPME). He has created in 2009 the Observatory AMAROK (<http://www.observatoire-amarok.com>) to develop scientific knowledge on the health of small business owners.

---

## 1 Introduction

Entrepreneurial activity can be understood as a series of events experienced by the small business owner (Schindehutte et al., 2006). However, the nature of these biographic events, their volume and frequency, and the individual appraisals of these events remain to be fully investigated (Morris et al., 2012). Event-based approaches are rarely employed in business sciences (Hoffman and Lord, 2013), particularly within the small business and entrepreneurship fields while the intra-individual level is concerned (Uy et al., 2010). Nevertheless, the inputs that represent organisational events may influence a key, underexplored, intangible asset affecting the equilibrium of a small business: the health of the owner (Torrès, 2013). This article thus aims to address these gaps, which are common to both the occupational health and entrepreneurship literatures (Thurik et al., 2016; Inserm, 2011; Stephan and Roesler, 2010).

This article proceeds as follows. First, the parsimonious, event-based studies that have been conducted in business/entrepreneurial settings are reviewed. Second, the psychological processing of biographic events is explored, with a focus on a neglected but key outcome: the health of the self-employed. Third, a review of the clinical methods used for capturing events underlines the role of two mediating constructs that are high in emotional content: stress and satisfaction. We note the limited literature that is devoted to entrepreneurs and small business owners on these subjects, a mixed methods research design is thus proposed. It begins with a qualitative longitudinal survey that categorises the most notable events in entrepreneurial activity. Next, a quantitative cross-sectional questionnaire is administered to evaluate the coded events in terms of the emotional facets of stress and satisfaction. Finally, we assess the effect of the events experienced by the owners on their health variances. We conclude by presenting and discussing our results, two event-based inventories that can predict small business owners' health.

## 2 Literature review

### 2.1 *Event-based approach to entrepreneurial activity*

#### 2.1.1 *Observing entrepreneurial activity*

In this study, we follow the definition of 'entrepreneurial activity' utilised the Organisation for Economic Co-operation and Development (OECD). According to the OECD, entrepreneurial activity represents "the enterprising human action in pursuit of

the generation of value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets” [Ahmad and Seymour, (2008/1), p.14]. This definition implies that both salaried and independent workers may be involved in entrepreneurial activity (Wennekers and Thurik, 1999). However, the focus of this paper will be on the self-employed, i.e., on the owner-managers of a business that they may also have funded. We also acknowledge that entrepreneurial activity may occur in new ventures and established firms (Wright and Marlow, 2012). In brief, we will observe the activity of “people working for their own account and risk” [Stephan and Roesler, (2010) p.718] while they are involved in phases of developing their business that may combine exploration and exploitation endeavours. Studies of these organisational processes primarily rely on two theoretical perspectives: the outcome-based view and the event-based view (Aldrich and Martinez, 2001). This study will apply the latter perspective.

### *2.1.2 Event-based research in the business literature*

Getz (2007, p.18) defines an event as “an occurrence at a given place and time, a special set of circumstances, a noteworthy occurrence”. According to Moles (1972), an event has five main features: its degree of unpredictability, its private or public nature, its intensity, its intelligibility, and the number of individuals it involves. In business sciences, these features can then be observed at a macro-level (i.e., markets), at a meso-level (i.e., organisations) or at a micro-level (i.e., workers). The few event-based works in the literature primarily focus on the macro/meso-level of analysis. For instance, in the field of finance, *event study methods* are used to measure the disruptive effect of an unanticipated phenomenon on stock prices (e.g., McWilliams and Siegel, 1997). In strategic management, industry events are occasionally used to analyse inter-firm networks (e.g., Madhavan et al., 1998). In the field of leadership, events have been analysed for their potential to disrupt routines and to learn how leaders respond to these situations (e.g., Smith et al., 1994). Notwithstanding these few examples, observing organisational life through events is not a mainstream perspective in the business literature (Hoffman and Lord, 2013). Furthermore, the rare investigations conducted at a micro-level generally privilege the negative events (Weiss and Beal, 2005) that paid workers experience in their private lives (Bono et al., 2013; Mignonac and Herrbach, 2004).

### *2.1.3 Event-based research in the entrepreneurship and small business fields*

The relatively few studies of events are generally conducted from the perspective of process views of entrepreneurship (Moroz and Hindle, 2012). At a meso-level, Bhide (2000, p.5) regards entrepreneurial activity as an “opportunistic adaptation to unexpected events”. Herbane (2010) evokes the events that can generate a crisis within a small or medium-sized enterprise (SME). Nevertheless, crises are generally studied in terms of the ruptures of normality entailed rather than the events behind them (Altintas and Royer, 2009). At a micro-level, entrepreneurial activity has sometimes been described as a series of events experienced by the owner-manager (Schindehutte et al., 2006). Authors also discuss the exceptional events that represent, for the entrepreneur, the emergence of a new venture (*cf.* Carter et al., 1996; Kaulio, 2003; Shaper, 1984), its take-over or its

failure (*cf.* Baron, 2008). However, we observed no empirical approach that considers the noteworthy occurrences that occur between these three types of episodes.

The research designs of articles in the entrepreneurship and small business literature remain decisively outcome-driven, despite certain salient calls for more event-driven enquiries (Van de Ven and Engleman, 2004), particularly at a micro-level (Uy et al., 2010). There is a dearth of empirical data on the nature and features of the work events experienced by entrepreneurs (Morris et al., 2012), although we can assume that the diversity of such occurrences will be greater for the business owner than for other workers (Burch et al., 2013). Furthermore, the outcomes of events are generally analysed by means of economic indicators, and this approach overlooks the importance of psychological indicators.

## 2.2 *Biographic events as predictors of a small business owner's health*

### 2.2.1 *Psychological outcomes of events*

From a life-course perspective, occurrences that significantly affect an individual have been labelled 'biographic events' (Hutchison, 2011). Although different occurrences in the environment can be considered biographic events, an individual's experience becomes an event according to the emotions<sup>1</sup> and the reinterpretation it entails (Levy, 2012). Thus, biographic events can effectively be understood as double-sided phenomena. They have an *objective* facet that is observable by anyone; an event is a distinguishable unit of activity occurring at a given place and with a beginning and an end (Hoffman and Lord, 2013). However, events also have a *subjective* facet that varies across individuals, which is the appraisal of an occurrence as important to one's role (Rentsch, 1990). The more an individual links an event to his concerns, the greater the associated emotional response will be (Frijda, 1988).

Given his central role in the company (Churchill and Lewis, 1983; Julien, 1998), the small business owner is liable to register more events as being significant than the other workers. Depending on how individuals cope with these biographic episodes, both their performance and personal equilibriums may be affected (Bhagat, 1983). However, if health issues affect the leader, the implications will be profound for the entire organisation and its members (Little et al., 2007). With respect to the small business owner, in particular, impaired health might immediately jeopardise the entire organisation; as Mintzberg (1979, p.312) cautions: "the Simple Structure is also the riskiest of structures, hinging on the health and whims of one individual". However, few studies explore the strong link between the health of the self-employed and the health of the business (Volery and Pullich, 2010). To conclude, owners' health should concern more than physicians because it "might be an underestimated resource for entrepreneurial behaviour and organisational development" [Vinberg et al., (2012), p.387].

### 2.2.2 *Health of small business owners*

The available literature is primarily outcome-based and compares the declared health levels of owners-managers with those of employees. According to our review of studies conducted over the past twenty years, only two empirical studies involve multiple countries (Cavelaars et al., 1998; Pikhart et al., 2001) and their results are contradictory. The remaining surveys concern a single country: only nine with reasonably sized samples

( $n > 1,000$ ) have been identified. Two surveys found that the self-employed are in better health than paid workers (Binder and Coad, 2013; Stephan and Roesler, 2010), two present the opposite results (Andersson, 2008; Lewin-Epstein and Yuchtman-Yaar, 1991) and five state that there are non-significant differences between the two groups (Algava et al., 2012; Dolinsky and Caputo, 2003; Muntaner et al., 2003; Parslow et al., 2004; Rietveld et al., 2013). In conclusion, no unambiguous conclusion has yet emerged (Volery and Pullich, 2010).

The literature remains in its early stages regarding the occupational determinants of small business owners' health. Hisrich et al. (2005, p.8) recognise that entrepreneurial activity implies "assuming the accompanying financial, psychic and social risks" but do not detail the nature of these psychosocial risks. In his recent review of pathogenic and protective factors involved in entrepreneurial activity, Torrès (2012) identifies fewer than a dozen publications that describe predictors of entrepreneurial health, such as loneliness (cf. Gumpert and Boyd, 1984), overwork (cf. Buttner, 1992) or locus of control (cf. Janssen and Surlemont, 2009). The common theme of this literature is to focus on given role features, which are continuous inputs, as opposed to the discrete role features that represent events. Furthermore, as discussed above, these event-based approaches are typically limited to the most extreme episodes in the business life span (birth, crisis or death/takeover).

In summary, the work events of small business owners have not been fully characterised yet and the tools necessary to do so are not available in the entrepreneurial literature (Grant and Ferris, 2012; Torrès and Lechat, 2012). We have no alternative but to look to other sciences for inspiration regarding our methodological approach.

### 2.2.3 Capturing biographic events: clinical methods

Since Jaspers (1933), there has been a long tradition amongst psychiatrists and psychologists of event-based research at the intra-individual level. Three highly acknowledged methods have been developed by combining qualitative and quantitative techniques and can be employed in this regard<sup>2</sup>: the (*major*) *life events scales*, the *daily hassles and uplifts* and the *affective event theory*. We propose to critically review the advantages and limitations of these techniques and then offer a synthesis (see Table 1).

**Table 1** Synthesis of methods for capturing biographic events

<i>Methods</i>	<i>Main author(s)</i>	<i>Discipline</i>	<i>Device</i>	<i>Inputs</i>	<i>Outputs</i>
<i>Life events</i>	Holmes and Rahe (1967)	Psychiatry	Weighted check-lists	Rare events in general life	Mental diseases due to radical changes
<i>Hassles and uplifts</i>	Kanner et al. (1981)	Psychology	Weighted check-lists	Frequent events in general life	Mental diseases due to incremental changes
<i>Affective events theory</i>	Weiss and Cropanzano (1996)	Psychology; management	Taxonomy of events on discrete emotions	Emotional responses to daily work events	Changes in job attitudes and behaviour

The life events method has been popularised through Holmes and Rahe's (1967) *social readjustment scale*, which is a checklist of 43 events ranked according to their stressful

intensity. This technique experienced substantial a great success amongst both medical researchers and practitioners (for a review, cf. Wethington, 2007) before being tested within organisational settings (e.g., Eden, 1982). The categorisation of events offered by this kind of scales remains valid (Scully et al., 2000), and their predictive power is recognised for outcomes such as depression (Monroe and Reid, 2009). However, by providing an arbitrary impact score for a landmark event (50 points for *marriage* in Holmes and Rahe's work), the scales frequently fail to take into account the individual differences in appraising a same event (Lazarus and Folkman, 1984; Vossel, 1987). Another limitation is that the events are only considered for their harmful potential, although some of them might be considered 'happy' (e.g., *a desired pregnancy* in Holmes and Rahe). A final matter concerns the poor coverage of working life. Only three events in Holmes and Rahe's scale can be applied to the small business owner (*significant illness; holidays; reorganisation at work*).

The hassles and uplifts scales (Kanner et al., 1981) assume that the accumulation of everyday minor events ultimately has a greater impact than exposure to a few major events. This approach remains consistent with more recent developments in the literature that argue that the frequency of events is the primary driver of psychological outcomes and outweighs their intensity (Schimmack, 2003). The scales include uplifts, recognising that certain events can play a positive role in individual well-being (Vinokur and Caplan, 1986). Correlations between events and mental pathologies are also becoming increasingly precise (Wu and Lam, 1993). Nevertheless, these scales share an imperfection with those listed above: they remain dedicated to general life rather than to occurrences in the professional context (Basch and Fisher, 2000). According to our research, only 11 events from the list of 252 items advanced by Kanner et al. (1981) concern small business owners.

The affective events theory (AET: Weiss and Cropanzano, 1996) posits that workers primarily react emotionally to events that occur while performing their jobs and that these accumulated experiences will affect certain outcomes, such as performance or engagement. The AET is clearly inspired by the hassles and uplifts perspective (Basch and Fischer, 2000). Nevertheless, some researchers have extended the AET framework to consider major events (Haag and Laroche, 2009), such as a merger or an organisational restructuring. The main difference between the latter and former scales is that the outcomes observed by the latter scales no longer include health variances but organisational attitudes and behaviours. A primary contribution of the AET is to fully appreciate that a response to a given event varies according to personal attributes, such as traits and styles of appraisal or coping. Although the AET clearly represents progress in characterising professional events (Ashkanasy and Humphrey, 2011), its operationalisation is delicate: the indicators that are retained – emotions – are numerous and difficult to capture (Fineman, 2004). Moreover, it is necessary to not succumb to the temptation to pursue an 'all psychological' approach, which would result in a number of events that is as high and varied as the number of individuals (Hobfoll, 1998). Ultimately, despite its popularity, the AET has rarely been tested empirically (Mitchell, 2011), and testing with entrepreneurs is no exception (Burch et al., 2013).

#### 2.2.4 *Evolutions in measurement protocols*

Until the mid-1990s, event-based surveys in organisations relied on retrospective self-reports completed by the respondents (Fisher and To, 2012). Following this, event

sampling methods, *aka* experience sampling methods (ESM)<sup>3</sup>, were introduced that allow participants to declare their thoughts, feelings and behaviours as they transpire in the natural environment (Uy et al., 2010). ESMs increase the ecological validity of research by capturing experiences ‘on the spot’ and minimising recall biases (Scollon et al., 2003). If ESM were applied to work events studies (Fisher and To, 2012), they appear destined for brief longitudinal studies based on the constraints of the protocol. The typical surveys effectively last a maximum of two weeks, during which time participants must respond up to twelve times per day (De Longis et al., 1992; Reis and Gable, 2000).

### 2.3 Emotional components of stress and satisfaction as mediators of events

#### 2.3.1 Linking events to health through emotions

Embracing the AET philosophy, we believe that reactions to events are primarily affective in organisational settings (as in life in general): “The special role of emotion seems to be that of an intelligent interface that mediates between input and output on the basis of what is most important to the organism” [Scherer, (1994), p.127]. Boyd and Gumpert (1983) were the first to consider the emotional episodes of the small business owner: these episodes were characterised by huge amplitude. More recently, Schindehutte et al. (2006) confirm that entrepreneurial activity implies numerous emotional peaks, which is understandable given the extreme levels of uncertainty and personal risk induced (Baron, 2008). However, we still know little about how self-employed entrepreneurs – and more broadly small business owners – experience their professions in affective terms (Burch et al., 2013; Patzelt and Shepherd, 2011). Moreover, the long-term effects of entrepreneurial emotions on health have also been largely ignored (Omoredet al., 2015).

Faithfully capturing an emotion requires understanding how it is generated. Elfenbein (2007) summarises such efforts in the following sequence:

- 1 detection of the event
- 2 registration of the event
- 3 emotional experience
- 4 post-emotional responses.

With respect to phase (2), registration of the event, two main processes are at work (Barrett and Russell, 1998; Mano and Oliver, 1993) in a dissociated manner (De Dreu et al., 2008). First, the *valence* of the event is determined, i.e., whether the individual attributes a pleasant or unpleasant nature to the event (Haag and Laroche, 2009). The valence constitutes the “basic building block of emotional life” [Barrett, (2006), p.35]. Second, the intensity of the event is determined, i.e., its power of psychic arousal in the individual (Russell, 2003). Phase (3), the emotional experience, is what we trivially designate as the emotion itself when we feel it; at this stage, the individual can put his feelings into words, borrowing from the wide register of discrete emotions. Phase (4), post-emotional responses, covers re-evaluations, attitudes, and behaviour (in our case, health behaviour).

Finally, the affective sciences indicate that stress and satisfaction are constructs that are high in emotional content, although they also incorporate cognitive and behavioural components (Lazarus, 1993; Oliver, 1997; Scherer, 1990; Schumm, 1999).

### 2.3.2 *Stress as a negative response to events*

A sufficiently consensual definition of psychological stress was presented by Lazarus and Folkman (1984). To summarise their definition, stress “occurs when an individual perceives that environmental demands tax or exceed his or her adaptive capacity” [Cohen et al., (2007), p.1685]. However, although the term *stress* remains polysemic (Kinman and Jones, 2005), we will use it specifically to evoke the individual response to an aversive event. We designate such an event by the term *stressor*. Stressors can be defined as the environmental stimuli that commonly produce psychological or physical distress in the organism (Hobfoll et al., 1998). We are nevertheless aware that certain stressors can, in parallel to the distress that is associated with them, generate certain positive outcomes, such as an increase in creativity (Sanandrés Domínguez, 2013) or satisfaction (Webster et al., 2011). However, stress essentially remains a negative response (Scherer, 1995; Baum, 1990) that incorporates high emotional content (Antonioni et al., 2003; McCraty and Tomasino, 2006; Tomasino, 2007). Furthermore, once stress becomes chronic, it is harmful to individual health (Kivimäki et al., 2012) and to organisational performance (Motowidlo et al., 1986; Richard and Gosselin, 2010). In summary, emotional stress appears to be an adequate mediator for capturing most of responses of an individual to a negative work event.

### 2.3.3 *Satisfaction as a positive response that works against stress*

The most cited definition is granted to Locke (1976, p.1300), who regards job satisfaction as a “pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences”. Job satisfaction was initially confounded with the experience of satisfaction, which is a positive emotion of accomplishment (Shaver et al., 1987). However, since Locke, job satisfaction has essentially been measured as an evaluation of the attributes and conditions of one’s work – in other words, as a cognitive response (Rice et al., 1989). After a long debate on the nature and operationalisation of satisfaction in business settings (*cf.* Babin and Griffin, 1998), a consensus appears to have emerged: satisfaction is a hybrid construct of emotion and cognition (Moorman, 1993; Weiss, 2002). However, debates persist with respect to determining which component has the greatest influence (Cronin, 2003; Strauss and Neuhaus, 1997).

In general, the affective component of satisfaction has been recognised as a positive determinant of subjective well-being (Diener, 1984). As with other positive emotions, satisfaction also serves to buffer the harmful effects of stress (Fredrickson, 2001). Seen as a construct, job satisfaction favourably affects both subjective well-being (Bowling et al., 2010) and objective health (Fischer and Sousa-Poza, 2009).

Theoretically, satisfaction might be envisaged as opposed to stress when we compare certain authors. Let us first cite Hobfoll (1989), for whom stress is the individual reaction to a (potential) loss of resources. Next, let us evoke the perspective of Locke (2009, p.146), for whom the response of satisfaction is triggered when “one experiences having gained or possessed a value”. More generally, stress is primarily generated by events that are appraised as negative, whereas satisfaction is primarily generated by positive events

(Headey and Wearing, 1991). As a conclusion, stress and satisfaction are complementary mediators between events and health.

#### *2.3.4 Stress and satisfaction of small business owners*

Empirical data concerning both the stress and the satisfaction of small business owners and/or self-employed entrepreneurs were non-existent forty years ago (Eden, 1973) and remain scarce at present (George and Hamilton, 2011).

Regarding stress, most available surveys commonly measure the stress resulting from the constancy of certain features of the entrepreneurial or managerial position, the so-called 'role stressors' (*cf.* Buttner, 1992; Prottas and Thompson, 2006; Rahim, 1996; Williams, 1985; Wincent and Örtqvist, 2009). The event-based approach remains in the early stages of its development in this regard. Only the stress associated with the failure of the venture has been fully explored (Baron, 2008; Rauch et al., 2007).

Regarding satisfaction, the literature primarily considers the self-employed (*cf.* Hundley, 2001; Prottas and Thompson, 2006) and entrepreneurs (Carree and Verheul, 2012; Cooper and Artz, 1995; Schjoedt, 2009) and occasionally small business owners (*cf.* Tetrick et al., 2000). With respect to stress, the surveys are role-based or linked to personal characteristics. The measurements concentrate on the cognitive facet of job satisfaction and neglect its affective facet.

#### *2.4 The implications of the literature review for our research design*

Regarding our multidisciplinary review, we can conclude that event-based enquiries are rare in research on small business owners. Measurements of continuous variables are dominant in entrepreneurship, particularly for capturing the sources of stress or satisfaction. However, clinical research has progressed over the past fifty years in its methods for recording the impact of discrete biographical variables. Life events and the hassles and uplifts scales can help provide effective techniques for developing pertinent checklists of respectively major and minor events. Moreover, the AET offers a useful framework for addressing interpersonal variability in the experience of events, through the analysis of emotional responses. As the first consequence of our literature review, we will choose a median perspective between major/minor events scales, by allowing the same attention to intensity and occurrence. We will then follow the emotional focus proposed by the AET.

Concerning the application of the above methods, we note that both caregivers and scholars typically have taken employees as their main subject of study; entrepreneurs and small business owners, regarded as self-employed workers, remain understudied. Furthermore, when they are considered, the instruments used do not account for the specificities of working without hierarchical subordination. As the second consequence of our literature review, we will create our own inventories in order to capture all the highs and lows in entrepreneurial activity.

Regarding the personal outcomes of events, the development of diseases is studied by the major/minor scales. But positive health outcomes are little considered, and the case of small business owners is ignored, although their health can be considered a key asset in the smooth operation of the organisation. Besides we learn that two complementary constructs, stress and satisfaction, exhibit good mediating properties between biographic events and health. As the third consequence of the literature review, we will use its

affective facets to weight an event's arousal power, before testing their cumulative effect on owner's health.

We conclude by observing that positive constructs attract less attention in the literature than negative constructs. The majority of checklists focus on aversive occurrences. Moreover, there is less theory developed regarding satisfaction than stress. Thus, researchers have not yet coined a term for the stimuli associated with this positive response as a counterpart to 'stressors' for stimuli associated with the negative response. Adopting the definition of stressors advanced by Hobfoll et al. (1998) as our inspiration, we will henceforth refer to *satisfactors*<sup>4</sup> when considering the environmental stimuli that commonly produce psychological or physical satisfaction in an organism. As a final consequence of our literature review, we will attempt to devote equal attention to positive and negative inputs/outputs.

### **3 Methodology**

#### *3.1 Sample and sampling*

Our sample comprised 357 owner-managers of SMEs. The eligibility criterion for our sample was thus to be the majority owner of an SME, in the European sense of the term (a payroll of fewer than 250 employees and turnover below 50 million Euros). The exclusion criterion was being a non-owning director of the company. The participants were recruited in mainland France, essentially from the members of the 'Centre for Young Directors' (*Centre des Jeunes Dirigeants*, an association gathering 3,500 professionals). The first selection was based on their national file, from which members who were not owners of their companies were removed. Then, on the basis of this new file, lots were drawn to form a panel of volunteer entrepreneurs and small business owners: 357 agreed to participate in our study.

The sample composition was as follows: 48% were owners of very small companies (fewer than ten employees), 37.5% of small companies (10 to 50 employees) and 14.5% of companies with more than 50 but fewer than 250 employees. Among the participants, 58.7% started their companies, 15.7% were family successors and 22.5% were business acquirers (other: 3.5%). Men represented 82.6% of the participants and women 17.4%. The average participant was 45.5 years old, with a standard deviation (SD) of 7.79. The youngest participant was 27 years old and the oldest was 67 years old. Their level of education was high: only 7.5% of the participants were self-taught, 82.5% had a bachelor's degree and 9.5% had a doctorate.

The longitudinal data were collected in ten sessions that were evenly spaced between March 2011 and October 2012, through phone questionnaires. The cohort numbered 357 members in the first session but only 329 by the tenth, which is equivalent to an attrition rate of 8%. A rate below 10% is considered acceptable in a longitudinal study (Twisk and de Vente, 2002) and does not lead to any bias threatening our study's internal validity (Kristman et al., 2005). The cross-sectional data were collected in a separate eleventh session – in December 2012 – which was optional: 292 individuals agreed to complete this session.

### 3.2 Measurements performed

The research design applied in this survey was a mixed methods approach, combining quantitative and qualitative measurements (Johnson et al., 2007). Its epistemological underpinning was pragmatic, in the sense crafted by John Dewey in the last century (cf. Vo et al., 2012), which implies that we prioritised the research question and the practical value of the knowledge to be obtained (Wicks and Freeman, 1998). The survey design was created specifically for the context, given the absence of appropriate tools. The administration was adapted to the business owners' schedules and unfamiliarity with participating in scientific surveys: the interviews were conducted by appointment between 7 am and 8 pm, including Saturdays. Data collection was performed by students in a Master's course on Entrepreneurship.

#### 3.2.1 Measurements of work events features

Three types of measurement were performed successively, to respect the 'natural' sequence of an individual's processing of an event.

The occurrence of an event was thus first measured using the following open question (sessions no. 1 to 10): "Over the course of the last month, what event has affected you the most with respect to your company?" All responses were systematically recorded, irrespective of whether the response's nature was effectively event-based and regardless of the theoretical trend to which the event would likely be attached. The valence of the event was then measured directly after its declared occurrence, by means of the following closed question: "Specify whether it is positive or negative". Any hesitation on behalf of the responder, or any absence of precision, was noted as 'neutral'.

The emotional intensity of the individual response to all the events experienced throughout the year was finally measured during a separate eleventh (optional) session. The corresponding question was: "We are going to give you a list of [positive; negative] events that you may have experienced in your role as business owner in the last year. If you genuinely did experience the event, please indicate for us how it made you feel in terms [of stress; of satisfaction]". The responses were recorded as follows: "[1] not at all; [2] a little; [3] somewhat; [4] a lot; and [5] a great deal". As this is a positive, unipolar scale, we avoided the bias of aversion to negative or null values (Schwarz et al., 1991).

The survey design we chose provided several advantages. The preliminary qualitative longitudinal approach offered respondents the opportunity to supply us with certain events that they would not have supplied us with in closed-ended self-reported scales (Mazzola et al., 2011). Only asking after the most notable event of the past month avoided *ipso facto* the bias of 'episodic memory' (Robinson and Clore, 2002): This bias corresponds to the fact that, when reconstructing past feelings, respondents have the best quality of recall for the most memorable moment of the period in question. Similarly, the reasonably short spacing – one and one-half months – between two longitudinal sessions limited memory deterioration (Schroeder and Costa, 1984). Furthermore, holding ten sessions to capture events made it possible to cover an entire year in the life of the company, which would not have been possible using ESM protocols. Moreover, this span of time also avoided missing notable seasonal events (e.g., holidays; annual results). Finally, the longitudinal aspect of the study made it possible to integrate variability into the duration of an individual's response to a given event (Nielsen et al., 2013).

### 3.2.2 Measurements of self-rated health

The respondents' state of health was measured by the following two open-ended questions (sessions no. 1 to 10): "In the course of the last month, would you say your physical health was..."; "In the course of the last month, would you say your mental health was..." The responses were recorded on the following traditional five-point scale: "Excellent; Very good; Good; Fair; and Poor". It should be noted that self-rated health indicators have proven to be highly accurate measurements of health (Quesnel-Vallée, 2007; Lundberg and Manderbacka, 1996). This validity is improved even further when the upper professional classes are the subjects of study (Dowd and Zajacova, 2007; Huisman et al., 2007).

## 3.3 Processing the measurements

### 3.3.1 Coding the verbatims of work events

The coding of the verbatims proceeded in two stages, in conformity with a 'mixed process' (Strauss and Corbin, 1990). First, two members of the research team performed an inductive coding of all verbatims, which resulted in an initial agreement level of 66%. Calling on the services of a third, more experienced member of the team made it possible to reconcile the two coders' results. The third's arbitration stabilised a list of 58 event categories. The name of each category was inspired by the verbatims used most frequently by those questioned. Particular attention was devoted to having an unequivocal and distinct name for each category, and we were prepared to divide a category into two others in the event of lexical ambiguity.

The grid of the 58 event categories was then used to conduct a deductive coding of all verbatims. Two members of the research team who had not participated in the inductive coding stage performed this task. Two coding reliability tests were conducted using the following formula (Miles and Huberman, 2003):  $Reliability = \frac{\text{number of agreements}}{\text{number of agreements} + \text{number of disagreements}}$ . With respect to inter-coder reliability, the two members compared their codings of the verbatims from the first three collection sessions: a rate of 69.4% was achieved; reliability exceeding 70% cannot reasonably be expected (*ibid*). With respect to intra-coder reliability, the operators obtained rates of 79.3% and 78.1%, with the ideal standard for this procedure being 80% (*ibid*).

The possible presence of conditioning bias, which is specific to participants in longitudinal studies, was verified (Warren and Halpern-Manners, 2012), when six of the participants offered the same response three times in a row; thus, only their first verbatim was retained.

### 3.3.2 Occurrence and intensity of events

The eleventh and final questionnaire allowed us to retrospectively measure the intensity of emotional stress or satisfaction accorded to each event experienced during the year. Several precautions were taken to minimise psychological bias, as we were already confronted with a gradual decline in the quality of episodic memory (Robinson and Clore, 2002).

Because the effort of re-memorising a negative event has a stronger impact on the mood of the responder, it was necessary to avoid the responder's response contaminating

the next item of opposite valence (Maybery et al., 2002). We thus decided to divide our 58 categories of events into two separate lists according to the majority valence of the verbatim enclosed.

The asymmetry of psychological impact between positive and negative events of the same intensity was also taken into account. Because this procedure was always to the detriment of the positive events (Taylor, 1991), we elected to begin by administering the list of events characterised with a positive valence.

The perceptions of the frequency and intensity of an event form two different experiences (Reich et al., 1988). To avoid disturbing the re-memorisation efforts of the responder, we did not ask the responder to quantify the frequency of an event over the year. The measurement only asked whether the event had been lived through once over the course of the year. We were thus able to calculate a probability of occurrence, i.e., what epidemiologists term *prevalence*.

A final precaution was taken when measuring intensity to prevent order bias: the systematic randomisation of the items on the two lists (Perreault, 1975).

### 3.3.3 Creating individual scores

The responses to the self-rated health measurements from sessions no. 1 to 10 were averaged to provide a physical health score (PHS) and a mental health score (MHS) for each respondent. Similarly, we gathered the intensities of emotional stress and satisfaction attributed to negative and positive events, respectively, experienced during the year. Averaging the data provided a score for negative events (NES) and a score for positive events (PES).

## 4 Results

### 4.1 Longitudinal measurements

#### 4.1.1 Categories of events and valence

Ten sessions – involving between 357 and 329 participants – made it possible to construct a database of 2,622 verbatims of the most striking work events in monthly entrepreneurial activity. Because certain verbatims did not directly address entrepreneurial activity, 138 (e.g., thunderstorms, geopolitics, conjuncture, presidential election, etc.) were set aside during the first cleaning of the data. After the inductive constitution of a grid depicting 58 categories, a deductive coding of the verbatims captured 92.6% of the cleaned data, i.e., 2,299 verbatims. The remaining verbatims ( $n = 185$ ) were ultimately not classified in the grid because of an overly general or ambiguous formulation.

Of the coded verbatims, the respondents regarded half (50.8%) as negative and 44.4% as positive. A Student test indicated that this difference in proportion was significant ( $t$ -test = 6.1;  $p < 0.001$ ). Less than 5% of the verbatims were considered neutral. Each category, except one, included 0.2% ( $n = 4$ ) to 6.1% ( $n = 140$ ) of coded verbatims. The notable exception was *Increase in commercial activity*, which represented twice as many (13.6%;  $n = 312$ ).

The list of 58 categories retained covered all the functional dimensions of SMEs: commercial management; staff management; financial management; the professional and personal aspects of the business owner; governance; strategy; relations with administration; and the management of production and of supplies.

Each category clearly distinguished itself by the majority valence of the verbatims of which it was composed, with the exception of one: *Departure of an associate/investor*. Effectively, 44.4% of its related verbatims had a positive valence, and an equal percentage had a negative valence. To determine the majority valence, five external judges (four business owners and one researcher) arbitrated the matter, which made it possible to consider that the valence for this category was negative. Ultimately, we obtained 30 categories of negative events and 28 categories of positive events (see Table 2).

**Table 2** Work events of the small business owners

<i>Categories of work events (n = 58)</i>	<i>Verbatims (n = 2,299)</i>	<i>Verbatims (% of the total)</i>	<i>Negative valence</i>	<i>Positive valence</i>	<i>Neutral</i>
Increase in commercial activity	312	13.6%	0.0%	99.4%	0.6%
Resignation of an employee	140	6.1%	83.6%	5.0%	11.4%
Drop in commercial activity	136	5.9%	98.5%	0.0%	1.5%
Hiring of an employee	118	5.1%	13.6%	80.5%	5.9%
Problems with treasury	118	5.1%	100.0%	0.0%	0.0%
Firing of an employee	90	3.9%	77.8%	7.8%	14.4%
Conflict with/between employees	78	3.4%	94.9%	0.0%	5.1%
Loss of a client	67	2.9%	97.0%	0.0%	3.0%
Good annual result	66	2.9%	0.0%	100.0%	0.0%
Good prospection	58	2.5%	0.0%	96.6%	3.4%
Absence of personnel	52	2.3%	94.2%	0.0%	5.8%
Overwork of the business owner	50	2.2%	70.0%	12.0%	18.0%
Poor annual result	48	2.1%	100.0%	0.0%	0.0%
Conflict with associate(s)/shareholder(s)	47	2.0%	100.0%	0.0%	0.0%
Conflict with a client	45	2.0%	100.0%	0.0%	0.0%
Valorisation of the work of the owner	37	1.6%	0.0%	100.0%	0.0%
Conflict with a supplier	36	1.6%	100.0%	0.0%	0.0%
Meeting with the employees	34	1.5%	17.6%	73.5%	8.8%
Launch of a new project/product	34	1.5%	0.0%	94.1%	5.9%
Problem of quality	33	1.4%	100.0%	0.0%	0.0%
Arrival of a new investor/associate	33	1.4%	6.1%	87.9%	6.1%
New strategic organisation	33	1.4%	3.0%	72.7%	24.2%
Entry of liquidities	32	1.4%	0.0%	100.0%	0.0%
Removal of the company	32	1.4%	9.4%	46.9%	43.8%
Legal proceedings	27	1.2%	85.2%	3.7%	11.1%
Training/coaching of the owner	26	1.1%	0.0%	100.0%	0.0%

**Table 2** Work events of the small business owners (continued)

<i>Categories of work events (n = 58)</i>	<i>Verbatims (n = 2,299)</i>	<i>Verbatims (% of the total)</i>	<i>Negative valence</i>	<i>Positive valence</i>	<i>Neutral</i>
Transfer/selling of the company	26	1.1%	38.5%	50.0%	11.5%
Control by the authorities	25	1.1%	92.0%	0.0%	8.0%
Good involvement of the personnel	24	1.0%	0.0%	100.0%	0.0%
Acquisition of a company	24	1.0%	0.0%	100.0%	0.0%
Breakdown/breakage of material	23	1.0%	100.0%	0.0%	0.0%
Meeting with the associates	23	1.0%	21.7%	65.2%	13.0%
Unpaid bills	22	1.0%	100.0%	0.0%	0.0%
Claims of the personnel	21	0.9%	95.2%	0.0%	4.8%
Bankruptcy	21	0.9%	90.5%	0.0%	9.5%
Satisfaction of clients	20	0.9%	0.0%	100.0%	0.0%
Celebration/festive event	20	0.9%	0.0%	100.0%	0.0%
The owner takes vacation time	20	0.9%	0.0%	100.0%	0.0%
Difficulties with public administration	20	0.9%	90.0%	5.0%	5.0%
Professional travel	19	0.8%	21.1%	73.7%	5.3%
Positive response from public administration	19	0.8%	0.0%	100.0%	0.0%
Participation in a trade show	17	0.7%	11.8%	82.4%	5.9%
Company stakeholder in difficulty	16	0.7%	100.0%	0.0%	0.0%
New equipment	15	0.7%	13.3%	73.3%	13.3%
Creation of a new company	15	0.7%	0.0%	100.0%	0.0%
Increase the size of the premises	14	0.6%	0.0%	85.7%	14.3%
Safety problem	13	0.6%	100.0%	0.0%	0.0%
Serious illness of an employee	12	0.5%	100.0%	0.0%	0.0%
Good social climate	11	0.5%	0.0%	100.0%	0.0%
Death of a stakeholder	11	0.5%	100.0%	0.0%	0.0%
Health problems for the owner	11	0.5%	100.0%	0.0%	0.0%
Lack of recognition of the owner	11	0.5%	100.0%	0.0%	0.0%
Pressure from the competition	10	0.4%	80.0%	20.0%	0.0%
Good understanding between the associates	10	0.4%	0.0%	100.0%	0.0%
Departure of an associate/investor	9	0.4%	44.4%	44.4%	11.1%
Fiscal pressure	6	0.3%	100.0%	0.0%	0.0%
Error/strategic failure	5	0.2%	100.0%	0.0%	0.0%
Success of the strategy	4	0.2%	0.0%	100.0%	0.0%

#### 4.1.2 Health

Regarding self-rated health measured during sessions 1 to 10, the average scores for the physical component varied from 1.67 to 4.70 depending on the respondents ( $n = 292$ ).

The mean of the sample was 2.93 ( $SD = 0.59$ ). For the mental component of health, the average scores varied.

#### 4.2 *Cross-sectional measurements*

The inventories of events generated through the qualitative approach were then weighted according to their occurrence and their intensity of stress or satisfaction (see Tables 3 and 4).

**Table 3** Event-based stressors of the small business owners

<i>Categories of stressors</i>	<i>Average intensity (1 to 5)</i>	<i>Event experienced during the year</i>	<i>Probability of occurrence (100% = 292)</i>
Bankruptcy	3.68	19	6.5%
Problem of treasury	3.52	185	63.4%
Drop in commercial activity	3.45	194	66.4%
Poor annual result	3.29	150	51.4%
Legal proceedings	3.23	90	30.8%
Conflict with associate(s)/shareholder(s)	3.23	66	22.6%
Overwork for the owner	3.21	271	92.8%
Serious illness of an employee	3.20	88	30.1%
Conflict with/between employees	3.11	151	51.7%
Overwork for the owner	3.21	271	92.8%
Serious illness of an employee	3.20	88	30.1%
Conflict with/between employees	3.11	151	51.7%
Firing of an employee	3.05	131	44.9%
Fiscal pressure	3.03	177	60.6%
Error/strategic failure	3.03	132	45.2%
Unpaid bills	2.98	197	67.5%
Health problems for the owner	2.97	145	49.7%
Departure of an associate/investor	2.97	29	9.9%
Quality problem	2.91	187	64.0%
Difficulties with public administration	2.89	159	54.5%
Death of a stakeholder of the company	2.86	28	9.6%
Safety problem	2.85	80	27.4%
Stakeholder of the company in difficulty	2.82	154	52.7%
Pressure from the competition	2.81	247	84.6%
Breakdown/breakage of material	2.80	136	46.6%
Loss of a client	2.79	201	68.8%
Conflict with a client	2.78	188	64.4%
Control by the authorities	2.72	122	41.8%
Absence of personnel	2.66	176	60.3%

**Table 3** Event-based stressors of the small business owners (continued)

<i>Categories of stressors</i>	<i>Average intensity (1 to 5)</i>	<i>Event experienced during the year</i>	<i>Probability of occurrence (100% = 292)</i>
Conflict with a supplier	2.53	125	42.8%
Claims by the personnel	2.53	116	39.7%
Resignation of an employee	2.44	142	48.6%
Lack of recognition of the owner	2.40	152	52.1%

**Table 4** Event-based *satisfactors* of the small business owners

<i>Categories of satisfactors</i>	<i>Average intensity (1 to 5)</i>	<i>Event experienced in the year</i>	<i>Probability of occurrence (100% = 292)</i>
Satisfaction of clients	3.78	284	97.3%
Training/coaching of the owner	3.76	189	64.7%
Increasing the size of the premises	3.72	87	29.8%
The company moves premises	3.72	74	25.3%
Creation of a new company	3.71	56	19.2%
Good understanding with the associates	3.69	193	66.1%
Vacation time for the owner	3.64	258	88.4%
Good social climate	3.60	260	89.0%
Celebration/festive event	3.53	171	58.6%
Good involvement of the personnel	3.51	257	88.0%
New equipment	3.47	122	41.8%
Launch of a new project/product	3.44	197	67.5%
New strategic organisation	3.41	190	65.1%
Meeting with the employees	3.41	235	80.5%
Success of the strategy	3.36	261	89.4%
Professional travel	3.35	232	79.5%
Valorisation of the owner's work	3.33	258	88.4%
Meeting with the associates	3.31	173	59.2%
Recruitment of an employee	3.27	202	69.2%
Good annual result	3.19	256	87.7%
Arrival of a new investor/associate	3.17	53	18.2%
Participation in a trade show	3.15	137	46.9%
Acquisition of a company	3.14	43	14.7%
Transfer/Selling of the company	3.13	23	7.9%
Entry of liquidities	3.10	227	77.7%
Increase in commercial activity	3.08	238	81.5%
Good prospectation	3.00	243	83.2%
Positive response from public administration	2.96	169	57.9%

#### 4.2.1 Occurrence

The probability of occurrence of each category of event is given by the proportion of respondents who reported having experienced it over the course of the year. This probability varied between 6.5% and 97.6% of the respondents, with an average of 55.1% ( $SD = 24.5$ ). The distribution of the occurrence values for a category of events followed a normal distribution [ $asymmetry = -0.29$  ( $SE = 0.31$ ),  $p > 0.05$ ;  $flattening = -0.74$  ( $SE = 0.62$ ),  $p > 0.05$ ].

With regard to the stressors, their occurrence varied from 19 subjects for *Bankruptcy* to 271 for *Overwork of the business owner*, with an average of 141 (48.4% of respondents). Regarding the satisfactors, the occurrence varied from 23 subjects for *Transfer/selling of the company* to 284 for *Customer satisfaction*, with an average of 182 (62.2% of respondents).

An analysis of variance (ANOVA) revealed that the average difference in occurrence between satisfactors and stressors was significant ( $F$ -test inter-group = 4.921;  $p < 0.05$  for 1 ddl). Business owners significantly reported that they experienced more positive events than negative events throughout the year.

#### 4.2.2 Intensity

Intensity was measured on a scale of emotional stress for the categories of negative events and on a scale of emotional satisfaction for those of positive events. The scales ranged from one to five.

For the stressors, the average intensity varied between 2.40 and 3.68, depending on the event, with a mean of 2.96 for the 30 categories. The corresponding *standard errors* ( $SE$ ) varied from 0.05 to 0.26 ( $SE\ mean = 0.09$ ). The distribution of the values of the average intensity of stress followed a normal distribution [ $asymmetry = 0.32$  ( $SE = 0.43$ ),  $p > 0.05$ ;  $flattening = 0.03$  ( $SE = 0.83$ ),  $p > 0.05$ ].

For the satisfactors, the average intensity varied between 2.96 and 3.78, depending on the event, with a mean of 3.39 for the 28 categories. The corresponding  $SE$  varied from 0.06 to 0.32 ( $SE\ mean = 0.11$ ). The distribution of the values of the average intensity of satisfaction followed a normal distribution [ $asymmetry = 0.32$  ( $SE = 0.44$ ),  $p > 0.05$ ;  $flattening = -1.20$  ( $SE = 0.84$ ),  $p > 0.05$ ].

Ultimately, on an analogous five-point scale, the average feeling associated with the satisfactors was higher (3.39) than the average feeling associated with the stressors (2.96). However, these scores cannot be compared: the constructs of stress and satisfaction differ by nature.

### 4.3 Predictive effect of the work events on health

#### 4.3.1 Design and hypotheses

The stress accumulated throughout the year, due to the experience of negative events, was operationalised by a score referred to as the NES. The satisfaction accumulated throughout the year, due to the experience of positive events, was operationalised by a score referred to as the PES. These two scores were then used as independent variables in two multiple linear regressions, in which the dependent variables were physical health (operationalised by PHS) and mental health (operationalised by MHS).

As a consequence of the literature review, our hypotheses were that stress would have a negative effect on health (H1) and satisfaction a positive effect on health (H2). We also assumed that the effect of satisfaction would have a moderating effect on stress, i.e., a stress-satisfaction interaction (H3). Three control variables were added to each model: age, sex and company size. The models were tested on the individual scores of 281 respondents<sup>5</sup> using SPSS software.

#### 4.3.2 Significance of models

The ANOVA showed that both models were significant with respect to the explanatory power of the variables included, as indicated by the Fisher test for the mental health ( $F$ -test = 17.05,  $p < 0.001$  for 6 ddl) and physical health models ( $F$ -test = 7.95,  $p < 0.001$  for 6 ddl). The variance inflation factors confirmed the independence of the explanatory variables for the mental health ( $VIF < 1.177$ ) and physical health models ( $VIF < 1.668$ ). The Durbin-Watson ( $DW$ ) test confirmed the independence of the residuals for the mental health ( $DW = 1.7$ ) and physical health models ( $DW = 1.8$ ).

#### 4.3.3 Test of the mental health model

The standardised regression coefficients –  $\beta$  coefficients – were significant for the two explanatory variables but not for the interaction between these variables (see Table 5). H1 and H2 were thus supported, with stress having a greater effect on mental health ( $\beta = -0.47$ ,  $p < 0.001$ ) and satisfaction having a lower and opposite effect ( $\beta = 0.32$ ,  $p < 0.001$ ). The only significant control variable was age ( $\beta = 0.16$ ,  $p < 0.01$ ), indicating that older participants are advantaged. The model explained 25% of the variance in mental health, as indicated by the adjusted coefficient of determination (non-adjusted  $R^2 = 0.26$ ).

**Table 5** Linear regressions testing the effects of work events on health

Variables	Mental health (MHS)	Physical health (PHS)
Control		
Age	0.16**	0.08
Sex <sup>a</sup>	-0.03	-0.14*
Company size	-0.01	-0.02
Prediction		
Event-based stress (NES)	-0.47***	-0.33***
Event-based satisfaction (PES)	0.32***	0.19**
Moderation		
Stress-satisfaction interaction	-0.02	-0.01
Test $F$ (ddl):	17.05(6)***	7.96(6)***
$R^2$ :	0.26	0.14
Adjusted $R^2$ :	0.25	0.13

Notes:  $n = 281$ . Only standardised coefficients ( $\beta$ ) are reported.

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

<sup>a</sup>Reference = woman

#### 4.3.4 Test of the physical health model

As in the previous model, the significance of the  $\beta$  coefficients implies that H1 and H2 were supported but H3 was not (see Table 5). Stress exhibited a strong, negative effect on physical health ( $\beta = -0.33, p < 0,001$ ). Satisfaction exhibited a mild, positive effect ( $\beta = 0.19, p < 0.01$ ). With respect to the control variables, only sex had a slight influence ( $\beta = -0.14, p < 0.05$ ). The model explained 13% of the variation in physical health (non-adjusted  $R^2 = 0.14$ ), approximately half that of mental health.

## 5 Discussion and implications

### 5.1 Discussion of the results

#### 5.1.1 Monthly citations versus annual occurrence of events

An analysis of the longitudinal responses of the small business owners reveals that negative events (50.8% of the verbatims) were cited more often than positive events (44.4%). The over-representation of negative valence in these open questions appears consistent with the literature concerning the negativity bias that is naturally present in individuals (Baumeister et al., 2001). However, an assessment of the annual experiences of respondents using closed questions shows that the owners reported that they had experienced significantly more positive events than negative events (average occurrence of 0.623 versus 0.484).

This higher occurrence of positive events may explain why a small business owner manages to bear the considerable hindrances of his work: they are compensated by more regular satisfaction. This notion that entrepreneurial activity is ultimately more often tinged with positive than with negative events echoes previous measurements of job satisfaction. Several surveys have indicated that the self-employed – including some entrepreneurs – declare a level of role-based satisfaction that is systematically greater than that of salaried workers (Benz and Frey, 2008; Lange, 2012; Millán et al., 2013). It is thus possible to assume that the self-employed may also experience higher event-based satisfaction than that of employees. But this point, which is beyond the scope of this paper, merits further research.

#### 5.1.2 Comments on stressors

If we focus on the extreme values of occurrence and intensity, three stressors deserve particular attention. The category *Overwork* was the stressor most commonly experienced by the owners. Although overwork is ultimately harmful for one's health (van der Hulst, 2003), the owners were ultimately responsible for imposing it on themselves, which supports the proposition that the effort to adapt oneself is a constant aspect of entrepreneurial function. It is notable that the respondents regarded *Overwork* as an event-based stressor, although theory considers it as a continuous one, i.e., a role stressor, which is also the case for *Lack of recognition of the owner* and *Fiscal pressure*.

The category *Lack of recognition of the owner*, despite being frequently evoked in owners' responses, was the stressor experienced as being the least intense. Are small business owners resigned to having a poor image with their employees? This topic should also be investigated further because we know that social recognition is not one of the

main reasons advanced for becoming an entrepreneur by those planning to become entrepreneurs (Carter et al., 2003).

The category *Bankruptcy* is both the least experienced and the most intense of the stressors. For a business owner, filing for bankruptcy entails not only the loss of his job and layoff of his employees (Torrès, 2011) and his capital but also (sometimes) the ruin of his entire life, or even that of several generations. This stressor merits particular attention given its impact on mental health. Because business owners tend to associate the failure of their company with that of their person, bankruptcy can effectively result in considerable psychological trauma (Jenkins et al., 2014; Ucbasaran et al., 2013). *Bankruptcy* can be qualified as a major life event in the sense of Holmes and Rahe (1967). This stressor raises the question of support offered to a business owner in the event of bankruptcy.

### 5.1.3 Comments on the satisfactors

If we focus on the extreme values of occurrence and intensity, three satisfactors merit particular attention. The category *Satisfaction of clients* is both the most experienced satisfactor and the most intense: nothing appears to satisfy a business owner more than happy customers. Would this also be the case for other workers who are not shareholders of the organisation? The preponderance of this satisfactor among employers should make them reconsider the question of their employees' motivation.

The category *Positive response from public administration* is the least intense satisfactor. This result leads us to believe that business owners do not have any great constructive expectation from the public authorities. We suggest that such institutions conduct customer surveys to understand why.

The category *Transfer/selling of the company* is the least experienced satisfactor and can be ambiguous in valence for certain business owners: relinquishing control of one's business can be experienced as a period of mourning for a tremendous professional life (Pailot, 1999).

## 5.2 Contributions of the results

### 5.2.1 Theoretical contribution

As argued above, business sciences have understudied biographic events in the life of the business owner – or of the entrepreneur – relative to the relevance of such events to the smooth operation of a business. In the psychology and psychiatry literatures, we notice that salaried workers receive almost all the attention and primarily involve events of a private nature. By supplying a complete categorisation of striking occupational occurrences for the self-employed, we thus advance an event-driven approach for the entrepreneurship and small business fields. As our main listed events can be qualified as affective, we help extend the AET framework beyond salaried employees.

Our event categories, which are comprehensive with respect to managerial and entrepreneurial activity, include certain episodes that are only fully experienced by owners (e.g., *Bankruptcy*, *Problem of treasury*, *Control by the authorities*), confirming their specific position in the organisation. In addition, we also extend the AET framework to outcomes other than those classically considered (i.e., job satisfaction or commitment) because we link experienced affective events to health. Unlike the mainstream literature

in occupational medicine, which concentrates on pathogenic factors, we devote equivalent attention here to positive and negative events. We even introduce a new term to name the events associated with satisfaction: ‘satisfactors’.

Finally, we advance the leader’s equilibrium as an organisational issue, supporting an original current presuming that the owner-manager’s health is a strategic intangible asset for small businesses.

### 5.2.2 *Methodological contribution*

The mixed methods design of our research results in an approach that is widely advocated but rarely empirically applied when studying work stress: “The investigations fully blending quantitative and qualitative methods in evaluating risks and more specifically psychosocial ones remain quite scarce” [Ponnelle et al., (2012), p.202].

Our sample essentially consists of CJD members. Its significant size, as well as the diversity of professional statuses gathered in CJD (Grazzini and Boissin, 2013), warrants the assumption that our proposed 58 categories of events cover the main fields in which nascent entrepreneurs or more ‘classic’ business owners can be involved throughout the year. The sample size and coverage attests to the consistency of the measurements obtained, given the initial objective of capturing all the notable experiences in entrepreneurial activity. In addition to the internal validity of this coding grid, the reliability tests (intra- and inter-coder) are in conformity with the standards in the literature. This study has thus allowed us to rigorously construct two new scales that we term the event-based *stressometer* and *satisfactometer*. These tools are complementary to existing tools, which primarily measure the role-based stress and satisfaction of paid workers.

Because we assessed the influence of the events from our stressometer and satisfactometer on health outcomes, we can ensure that they are predictive. Ultimately, our method explains 25% of the variance in mental health and 13% of the variance in physical health. These ratios appear to conform to the best standards in occupational medicine research (cf. the meta-analysis performed by Faragher et al., 2005), particularly regarding the effect of stress on mental health.

### 5.2.3 *Practical contribution*

This study can benefit self-employed entrepreneurs and small business owners – particularly those who are the least experienced. Effectively, our event categories allow business creators to locate key moments in entrepreneurial activity. They can use these categories to focus their attention on positive events and attempt to experiment with them regularly. In terms of well-being, the frequency of the positive emotions associated with events may effectively be a better predictor than their intensity (Boehm and Lyubomirsky, 2008; Diener et al., 1991). In parallel, our checklist of stressors can allow any owner to be aware of the negative events that they should ideally avoid or anticipate. In this regard, policy makers concerned with entrepreneurial support are invited to reinforce their actions during events that are particularly intense in terms of stress.

Finally, healthcare practitioners can appropriate our findings to better diagnose the psychosocial risks of their self-employed patients. Our stressometer makes it possible to retrospectively evaluate the number and the intensity of events experienced, which will weaken health at the end of the year.

### 5.3 Limits and propositions for future research

First, the aim of this study was to better qualify work events. As a consequence, events from private life were ignored, although we are aware they can also affect health.

Regarding the psychological response to work events, we retain only two mediators: emotional stress and satisfaction. A possible avenue for future research would be to offer participants a broader range of positive and negative constructs for each event. This broader range would be interesting regarding discrete emotions because most of our listed events can be categorised as affective events. This proposal would make it possible to compare the events via the emotions that they generate in common, an analysis that has yet to be conducted on entrepreneurs (Morris et al., 2012) or small business owners.

Another useful extension would be to account for the moderating role of certain psychosocial resources in one's response to events. Specifically, we believe that social support and personality traits would be relevant in this regard. The importance of personality remains a subject of debate in the entrepreneurial literature between supporters of the process school (e.g., Gartner, 1989) and proponents of traits (e.g., McClelland, 1987). Following the latter school, we learn for instance that a strong *sense of coherence* (Antonovsky, 1987) would have a 'rose-tinted glasses' effect that is beneficial to satisfaction (Amirkhan and Greaves, 2003), whereas a low level of emotional stability would have the opposite effect (Judge et al., 2002). Analysis of optimism bias (Elhem et al., 2015) or overconfidence (Roger and Schatt, 2015) may also be additional avenues of research. We thus suggest that at least one measure of traits be included in similar research to be able to adjust the results, if necessary.

Finally, it would be interesting to administer our stressometer and satisfactometer to salaried workers whose responsibilities are similar to those of business owners (i.e., key executives of an SME). A comparison of the experienced events and their corresponding impact scores might contribute to answering a hotly debated question: is there a health benefit to being self-employed?

## 6 Conclusions

In this research, we semantically generated two checklists of work events and weighted them according to their intensity of stress or satisfaction and to their occurrence over a year. We then demonstrated the predictive power of these categorised events on the mental and physical health of small business owners. Our results develop an event-driven approach within the entrepreneurial and small business literature, specifically extending the AET framework beyond salaried workers and to health outcomes. We supply comprehensive checklists that researchers can use to capture the emotional stress and satisfaction of small business owners and self-employed entrepreneurs. The checklists' explanatory qualities regarding health variance also mean that they are potential preventive tools for practitioners and caregivers. Ultimately, we contribute to the development of an underexplored although strategic subject for any promoter of sustainable entrepreneurship: the health of the self-employed.

## Acknowledgements

The authors thank 'LABEX Entreprendre' of the University of Montpellier and Malakoff Mederic group for their financial help for this research.

## References

- Ahmad, N. and Seymour, R.G. (2008/1) *Defining Entrepreneurial Activity: Definitions Supporting Frameworks for Data Collection*, OECD Statistics Working papers, OECD Publishing, Paris.
- Aldrich, H. and Martinez, A. (2001) 'Many are called, but few are chosen: an evolutionary perspective for the study of entrepreneurship', *Entrepreneurship Theory and Practice*, Vol. 25, No. 4, pp.41–56.
- Algava, E., Cavalin, C. and Célérier, S. (2012) 'La singulière bonne santé des indépendants [The singular health of self-employed]', *Travail et Emploi*, Vol. 132, No. 4, pp.5–20.
- Altintas, G. and Royer, I. (2009) 'Renforcement de la résilience par un apprentissage post-crise: une étude longitudinale sur deux périodes de turbulence [Strengthening of the resilience by a post-crisis learning: a longitudinal study over two periods of turbulence]', *M@n@gement*, Vol. 12, No. 4, pp.266–293.
- Amirkhan, J.H. and Greaves, H. (2003) 'Sense of coherence and stress: the mechanics of a healthy disposition', *Psychology and Health*, Vol. 18, No. 1, pp.31–62.
- Andersson, P. (2008) 'Happiness and health: well-being among the self-employed', *Journal of Socio-Economics*, Vol. 37, No. 1, pp.213–236.
- Antoniou, A.S., Davidson, M.J. and Cooper, C.L. (2003) 'Occupational stress, job satisfaction and health state in male and female junior hospital doctors in Greece', *Journal of Managerial Psychology*, Vol. 18, No. 6, pp.592–621.
- Antonovsky, A. (Ed.) (1987) *Unraveling the Mystery of Health: how People Manage Stress and Stay Well*, Jossey-Bass Publishers, San Francisco.
- Ashkanasy, N.M. and Humphrey, R.H. (2011) 'Current emotion research in organizational behavior', *Emotion Review*, Vol. 3, No. 2, pp.214–224.
- Babin, B.J. and Griffin, M. (1998) 'The nature of satisfaction: an updated examination and analysis', *Journal of Business Research*, Vol. 41, No. 2, pp.127–136.
- Baron, R.A. (2008) 'The role of affect in the entrepreneurial process', *Academy of Management Review*, Vol. 33, No. 2, pp.328–340.
- Barrett, L.F. (2006) 'Valence is a basic building block of emotional life', *Journal of Research in Personality*, Vol. 40, No. 1, pp.35–55.
- Barrett, L.F. and Russell, J.A. (1998) 'Independence and bipolarity in the structure of current affect', *Journal of Personality and Social Psychology*, Vol. 74, No. 4, pp.967–984.
- Basch, J. and Fisher, C.D. (2000) 'Affective events – emotions matrix: a classification of work events and associated emotions', in Ashkanasy, N.M. et al. (Eds.): *Emotions in the Workplace*, pp.36–48, Quorum Books, Westport.
- Baum, A. (1990) 'Stress, intrusive imagery, and chronic distress', *Health Psychology*, Vol. 9, No. 6, pp.653–675.
- Baumeister, R.F., Bratslavsky, E., Finkenauer, C. and Vohs, K.D. (2001) 'Bad is stronger than good', *Review of General Psychology*, Vol. 5, No. 4, pp.323–370.
- Benz, M. and Frey, B.S. (2008) 'The value of doing what you like: evidence from the self-employed in 23 countries', *Journal of Economic Behavior & Organization*, Vol. 68, No. 3, pp.445–455.
- Bhagat, R.S. (1983) 'Effects of stressful life events on individual performance effectiveness and work adjustment processes within organizational settings: a research model', *Academy of Management Review*, Vol. 8, No. 4, pp.660–671.

- Bhide, A. (Ed.) (2000) *The Origin and Evolution of New Businesses*, Oxford University Press, Oxford.
- Binder, M. and Coad, A. (2013) 'Life satisfaction and self-employment: a matching approach', *Small Business Economics*, Vol. 40, No. 4, pp.1009–1033.
- Boehm, J.K. and Lyubomirsky, S. (2008) 'Does happiness promote career success?', *Journal of Career Assessment*, Vol. 16, No. 1, pp.101–116.
- Bono, J., Glomb, T., Shen, W., Kim, E. and Koch, A. (2013) 'Building positive resources: effects of positive events and positive reflection on work-stress and health', *Academy of Management Journal*, Vol. 56, No. 6, pp.1601–1627.
- Bowling, N.A., Eschleman, K.J. and Wang, Q. (2010) 'A meta-analytic examination of the relationship between job satisfaction and subjective well-being', *Journal of Occupational and Organizational Psychology*, Vol. 83, No. 4, pp.915–934.
- Boyd, D.P. and Gumpert, D.E. (1983) 'Coping with entrepreneurial stress', *Harvard Business Review*, Vol. 61, No. 2, pp.44–64.
- Burch, G.F., Batchelor, J.H. and Humphrey, R.H. (2013) 'Emotional labor for entrepreneurs: a natural and necessary extension', *Entrepreneurship Research Journal*, Vol. 3, No. 3, pp.331–366.
- Buttner, E.H. (1992) 'Entrepreneurial stress: is it hazardous to your health?', *Journal of Managerial Issues*, Vol. 4, No. 2, pp.223–240.
- Cardon, M.S., Foo, M.D., Shepherd, D. and Wiklund, J. (2012) 'Exploring the heart: entrepreneurial emotion is a hot topic', *Entrepreneurship Theory and Practice*, Vol. 36, No. 1, pp.1–10.
- Carree, M.A. and Verheul, I. (2012) 'What makes entrepreneurs happy? Determinants of satisfaction among founders', *Journal of Happiness Studies*, Vol. 13, No. 2, pp.371–387.
- Carter, N.M., Gartner, W.B. and Reynolds, P.D. (1996) 'Exploring start-up event sequences', *Journal of Business Venturing*, Vol. 11, No. 3, pp.151–166.
- Carter, N.M., Gartner, W.B., Shaver, K.G. and Gatewood, E.J. (2003) 'The career reasons of nascent entrepreneurs', *Journal of Business Venturing*, Vol. 18, No. 1, pp.13–39.
- Cavelaars, A.E., Kunst, A.E., Geurts, J.J., Helmert, U., Lundberg, O., Mielck, A., Matheson, J., Mizrahi, Ar., Mizrahi, A., Rasmussen, N., Spuhler, T. and Mackenbach, J.P. (1998) 'Morbidity differences by occupational class among men in seven European countries: an application of the Erikson-Goldthorpe social class scheme', *International Journal of Epidemiology*, Vol. 27, No. 2, pp.222–230.
- Churchill, N.C. and Lewis, V.L. (1983) 'The five stages of small business growth', *Harvard Business Review*, Vol. 61, No. 3, pp.30–50.
- Cohen, S., Janicki-Deverts, D. and Miller, G.E. (2007) 'Psychological stress and disease', *JAMA: the Journal of the American Medical Association*, Vol. 298, No. 14, pp.1685–1687.
- Cooper, A.C. and Artz, K.W. (1995) 'Determinants of satisfaction for entrepreneurs', *Journal of Business Venturing*, Vol. 10, No. 6, pp.439–457.
- Cronin Jr., J.J. (2003) 'Looking back to see forward in services marketing: some ideas to consider', *Managing Service Quality*, Vol. 13, No. 5, pp.332–337.
- Csikszentmihalyi, M., Larson, R. and Prescott, S. (1977) 'The ecology of adolescent activity and experience', *Journal of Youth and Adolescence*, Vol. 6, No. 3, pp.281–294.
- De Dreu, C.K., Baas, M. and Nijstad, B.A. (2008) 'Hedonic tone and activation level in the mood-creativity link: toward a dual pathway to creativity model', *Journal of Personality and Social Psychology*, Vol. 94, No. 5, pp.739–756.
- De Longis, A., Hemphill, K.J. and Lehman, D.R. (1992) 'A structured diary methodology for the study of daily events', in Bryant, G. (Ed.): *Methodological Issues in Applied Psychology*, pp.83–109, Plenum Press, New York.

- Diener, E., Sandvik, E. and Pavot, W.G. (1991) 'Happiness is the frequency not intensity of positive versus negative affect', in Strack, F. et al. (Eds.): *Subjective Well-Being: An Interdisciplinary Perspective*, pp.119–139, Pergamon Press, Oxford.
- Dolinsky, A.L. and Caputo, R.K. (2003) 'Health and female self-employment', *Journal of Small Business Management*, Vol. 41, No. 3, pp.233–241.
- Dowd, J.B. and Zajacova, A. (2007) 'Does the predictive power of self-rated health for subsequent mortality risk vary by socioeconomic status in the US?', *International Journal of Epidemiology*, Vol. 36, No. 6, pp.1214–1221.
- Eden, D. (1973) 'Self-employed workers: a comparison group for organizational psychology', *Organizational Behavior and Human Performance*, Vol. 9, No. 2, pp.186–214.
- Eden, D. (1982) 'Critical job events, acute stress, and strain: a multiple interrupted time series', *Organizational Behavior and Human Performance*, Vol. 30, No. 3, pp.312–329.
- Elfenbein, H.A. (2007) 'Emotion in organizations: a review and theoretical integration', *The Academy of Management Annals*, Vol. 1, No. 1, pp.315–386.
- Elhem, B.F., Ezzeddine, B.M. and Boudabbous S. (2015) 'Does entrepreneur dispositional optimism bias affect small firms' technical efficiency', *International Journal of Entrepreneurship and Small Business*, Vol. 24, No. 3, pp.302–321.
- Faragher, E.B., Cass, M. and Cooper, C.L. (2005) 'The relationship between job satisfaction and health: a meta-analysis', *Occupational and Environmental Medicine*, Vol. 62, No. 2, pp.105–112.
- Fineman, S. (2004) 'Getting the measure of emotion-and the cautionary tale of emotional intelligence', *Human Relations*, Vol. 57, No. 6, pp.719–740.
- Fischer, J.A. and Sousa-Poza, A. (2009) 'Does job satisfaction improve the health of workers? New evidence using panel data and objective measures of health', *Health Economics*, Vol. 18, No. 1, pp.71–89.
- Fisher, C.D. and To, M.L. (2012) 'Using experience sampling methodology in organizational behavior', *Journal of Organizational Behavior*, Vol. 33, No. 7, pp.865–877.
- Flanagan, J.C. (1954) 'The critical incident technique', *Psychological Bulletin*, Vol. 51, No. 4, pp.327–358.
- Fredrickson, B.L. (2001) 'The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions', *American Psychologist*, Vol. 56, No. 3, pp.218–226.
- Frijda, N.H. (1988) 'The laws of emotion', *American Psychologist*, Vol. 43, No. 5, pp.349–358.
- Gartner, W. (1989) "'Who is an entrepreneur?" is the wrong question', *Entrepreneurship Theory and Practice*, Vol. 13, No. 4, pp.47–67.
- George, M. and Hamilton, E. (2011) 'Entrepreneurial satisfaction: job stressors, coping and well-being among small business owner managers', in Cooper, C.L. and Burke, R.J. (Eds.): *Human Resource Management in Small Business. Achieving Peak Performance*, pp.259–287, Edward Elgar, Cheltenham.
- Getz, D. (Ed.) (2007) *Event Studies: Theory, Research and Policy for Planned Events*, Elsevier, Oxford.
- Grant, S. and Ferris, K. (2012) 'Identifying sources of occupational stress in entrepreneurs for measurement', *International Journal of Entrepreneurial Venturing*, Vol. 4, No. 4, pp.351–373.
- Grazzini, F. and Boissin, J.P. (2013) 'Analyse des modèles mentaux développés par les dirigeants français en matière d'acquisition ou de reprise de PME [Analysis of mental models generated by french business owners in case of SME buyout or takeover]', *M@n@gement*, Vol. 16, No. 1, pp.49–87.
- Gumpert, D.E. and Boyd, D.P. (1984) 'The loneliness of the small business owner', *Harvard Business Review*, Vol. 62, No. 6, pp.18–24.
- Haag, C. and Laroche, H. (2009) 'Dans le secret des comités de direction, le rôle des émotions: proposition d'un modèle théorique [The role of emotions in management committee secrecy: A theoretical model proposed]', *M@n@gement*, Vol. 12, No. 2, pp.82–117.

- Headey, B.W. and Wearing, A.J. (1991) 'Subjective well-being: a stocks and flows framework', in Strack, F. et al. (Eds.): *Subjective Wellbeing. An Interdisciplinary Perspective*, pp.49–76, Pergamon Press, Oxford.
- Herbane, B. (2010) 'Small business research: time for a crisis-based view', *International Small Business Journal*, Vol. 28, No. 1, pp.43–64.
- Herzberg, F. et al. (1959/1964) *The Motivation to Work*, 2nd ed., John Wiley & Sons, New York.
- Hisrich, R.D. et al. (2005) *Entrepreneurship*, 6th ed., McGraw-Hill/Irwin, New York.
- Hobfoll, S.E. (1989) 'Conservation of resources: a new attempt at conceptualizing stress', *American Psychologist*, Vol. 44, No. 3, pp.513–524.
- Hobfoll, S.E. (Ed.) (1998) *Stress, Culture, and Community: The Psychology and Physiology of Stress*, Plenum, New York.
- Hobfoll, S.E., Schwarzer, R. and Chon, K.K. (1998) 'Disentangling the stress labyrinth: interpreting the meaning of the term stress as it is studied in health context', *Anxiety, Stress, and Coping*, Vol. 11, No. 3, pp.181–212.
- Hoffman, E.L. and Lord, R.G. (2013) 'A taxonomy of event-level dimensions: implications for understanding leadership processes, behavior, and performance', *The Leadership Quarterly*, Vol. 24, No. 4, pp.558–571.
- Holmes, T.H. and Rahe, R.H. (1967) 'The social readjustment rating scale', *Journal of Psychosomatic Research*, Vol. 11, No. 2, pp.213–218.
- Huisman, M., van Lenthe, F. and Mackenbach, J. (2007) 'The predictive ability of self-assessed health for mortality in different educational groups', *International Journal of Epidemiology*, Vol. 36, No. 6, pp.1207–1213.
- Hundley, G. (2001) 'Why and when are the self-employed more satisfied with their work?', *Industrial Relations*, Vol. 40, No. 2, pp.293–316.
- Hutchison, E.D. (2011) 'A life course perspective', in Hutchison, E.D. (Ed.): *Dimensions of Human Behaviour: The Changing Life Course*, pp.1–38, Sage, Thousand Oaks.
- Institut national de la santé et de la recherche médicale [Inserm] (2011) *Stress au travail et santé: situation chez les indépendants [Occupational Stress and Health: situation for the Self-Employed]*, Inserm, Paris.
- Janssen, F. and Surlemont, B. (2009) 'L'entrepreneur: ses caractéristiques et ses motivations [Features and motivations of the entrepreneur]', in Janssen, F. (Ed.): *Entreprendre. Une introduction à l'entrepreneuriat*, pp.33–48, De Boeck, Bruxelles.
- Jaspers, K. (Ed.) (1933) *Psychopathologie générale [General Psychopathology]*, Félix Alcan, Paris, (Original work published 1913).
- Jenkins, A.S., Wiklund, J. and Brundin, E. (2014) 'Individual responses to firm failure: appraisals, grief, and the influence of prior failure experience', *Journal of Business Venturing*, Vol. 29, No. 1, pp.17–33.
- Johnson, R.B., Onwuegbuzie, A.J. and Turner, L.A. (2007) 'Toward a definition of mixed methods research', *Journal of Mixed Methods Research*, Vol. 1, No. 2, pp.112–133.
- Judge, T.A., Heller, D. and Mount, M.K. (2002) 'Five-factor model of personality and job satisfaction: a meta-analysis', *Journal of Applied Psychology*, Vol. 87, No. 3, pp.530–541.
- Julien, P.-A. (Ed.) (1998) *The State of the Art in Small Business and Entrepreneurship*, Avebury, Avebury.
- Kanner, A.D., Coyne, J.C., Schaefer, C. and Lazarus, R.S. (1981) 'Comparison of two modes of stress measurement: daily hassles and uplifts versus major life events', *Journal of Behavioral Medicine*, Vol. 4, No. 1, pp.1–39.
- Kaulio, M.A. (2003) 'Initial conditions or process of development? Critical incidents in the early stages of new ventures', *R&D Management*, Vol. 33, No. 2, pp.165–175.
- Kinman, G. and Jones, F. (2005) 'Lay representations of workplace stress: what do people really mean when they say they are stressed?', *Work & Stress*, Vol. 19, No. 2, pp.101–120.

- Kivimäki, M., Nyberg, S.T., Batty, G.D., Fransson, E.I., Heikkilä, K., Alfredsson, L., Björner, J.B., Borritz, M., Burr, H., Casini, A., Clays, E., De Bacquer, D., Dragano, N., Ferrie, J.E., Geuskens, G.A., Goldberg, M., Hamer, M., Hooftman, W.E., Houtman, I.L., Joensuu, M., Jokela, M., Kittel, F., Knutsson, A., Koskenvuo, M., Koskinen, A., Kouvonen, A., Kumari, M., Madsen, I.E.H., Marmot, M.G., Nielsen, M.L., Nordin, M., Oksanen, T., Pentti, J., Rugulies, R., Salo, P., Siegrist, J., Singh-Manoux, A., Suominen, S.B., Väänänen, A., Vahtera, J., Virtanen, M., Westerholm, P.J.M., Westerlund, H., Zins, M., Steptoe, A. and Theorell, T. (2012) 'Job strain as a risk factor for coronary heart disease: a collaborative meta-analysis of individual participant data', *The Lancet*, Vol. 380, No. 9852, pp.1491–1497.
- Kristman, V.L., Manno, M. and Côté, P. (2005) 'Methods to account for attrition in longitudinal data: do they work? A simulation study', *European Journal of Epidemiology*, Vol. 20, No. 8, pp.657–662.
- Lange, T. (2012) 'Job satisfaction and self-employment: autonomy or personality?', *Small Business Economics*, Vol. 38, No. 2, pp.165–177.
- Lazarus, R.S. (1993) 'From psychological stress to the emotions: a history of changing outlooks', *Annual Review of Psychology*, Vol. 44, No. 1, pp.1–22.
- Lazarus, R.S. and Folkman, S. (Eds.) (1984) *Stress, Appraisal, and Coping*, Springer Publishing Company, New York.
- Levy, A. (2012) 'L'énigme de l'événement [The event enigma]', *Connexions*, Vol. 98, No. 2, pp.53–64.
- Lewin-Epstein, N. and Yuchtman-Yaar, E. (1991) 'Health risks of self-employment', *Work and Occupations*, Vol. 18, No. 3, pp.291–312.
- Little, L.M., Simmons, B.L. and Nelson, D.L. (2007) 'Health among leaders: positive and negative affect, engagement and burnout, forgiveness and revenge', *Journal of Management Studies*, Vol. 44, No. 2, pp.243–260.
- Locke, E.A. (1976) 'The nature and causes of job satisfaction', in Dunnette, M.D. (Eds.): *Handbook of Industrial and Organizational Psychology*, pp.1297–1349, Rand McNally, Chicago.
- Locke, E.A. (2009) 'Attain emotional control by understanding what emotions are', in Locke, E.A. (Ed.): *Handbook of Principles of Organizational Behavior*, pp.145–159, Wiley & Sons, Chichester.
- Lundberg, O. and Manderbacka, K. (1996) 'Assessing reliability of a measure of self-rated health', *Scandinavian Journal of Public Health*, Vol. 24, No. 3, pp.218–224.
- Madhavan, R., Koka, B.R. and Prescott, J.E. (1998) 'Networks in transition: how industry events (re) shape inter-firm relationships', *Strategic Management Journal*, Vol. 19, No. 5, pp.439–459.
- Mano, H. and Oliver, R.L. (1993) 'Assessing the dimensionality and structure of the consumption experience', *Journal of Consumer Research*, Vol. 20, No. 3, pp.451–466.
- Maybery, D., Maybery, M., Bresnan, R., Croft, B., Graham, R., Macaulay, J. and Szakacs, E. (2002) 'Responding to daily event questionnaires: the influence of the order of hassle and uplift scales', *Stress and Health*, Vol. 18, No. 1, pp.19–26.
- Mazzola, J.J., Walker, E.J., Shockley, K.M. and Spector, P.E. (2011) 'Examining stress in graduate assistants combining qualitative and quantitative survey methods', *Journal of Mixed Methods Research*, Vol. 5, No. 3, pp.198–211.
- McClelland, D.C. (1987) 'Characteristics of successful entrepreneurs', *Journal of Creative Behavior*, Vol. 21, No. 3, pp.219–233.
- McCraty, R. and Tomasino, D. (2006) 'Emotional stress, positive emotions, and psychophysiological coherence', in Arnetz, B.B. and Ekman, R. (Eds.): *Stress in Health and Disease*, pp.342–365, Wiley Germany, Weinheim.
- McWilliams, A. and Siegel, D. (1997) 'Event studies in management research: theoretical and empirical issues', *Academy of Management Journal*, Vol. 40, No. 3, pp.626–657.

- Mignonac, K. and Herrbach, O. (2004) 'Linking work events, affective states, and attitudes: an empirical study of managers' emotions', *Journal of Business and Psychology*, Vol. 19, No. 2, pp.221–240.
- Miles, M.B. and Huberman, A.M. (Eds.) (2003) *Analyse des données qualitatives [Qualitative Data Analysis]*; French traduction of the 2nd edition by Hlady-Rispal, M., De Boeck, Bruxelles.
- Millán, J.M., Hessels, J., Thurik, R. and Aguado, R. (2013) 'Determinants of job satisfaction: a European comparison of self-employed and paid employees', *Small Business Economics*, Vol. 40, No. 3, pp.651–670.
- Mintzberg, H. (Ed.) (1979) *The Structuring of Organizations*, Prentice-Hall, Englewood Cliffs.
- Mitchell, L.D. (2011) 'Job satisfaction and affective events theory: what have we learned in the last 15 years?', *Business Renaissance Quarterly*, Vol. 6, No. 2, pp.43–53.
- Moles, A.A. (1972) 'Notes pour une typologie des événements [Notes for a typology of events]', *Communications*, Vol. 18, No. 1, pp.90–96.
- Monroe, S.M. and Reid, M.W. (2009) 'Life stress and major depression', *Current Directions in Psychological Science*, Vol. 18, No. 2, pp.68–72.
- Moorman, R.H. (1993) 'The influence of cognitive and affective based job satisfaction measures on the relationship between satisfaction and organizational citizenship behavior', *Human Relations*, Vol. 46, No. 6, pp.759–776.
- Moroz, P.W. and Hindle, K. (2012) 'Entrepreneurship as a process: toward harmonizing multiple perspectives', *Entrepreneurship Theory and Practice*, Vol. 36, No. 4, pp.781–818.
- Morris, M.H., Kuratko, D.F., Schindehutte, M. and Spivack, A.J. (2012) 'Framing the entrepreneurial experience', *Entrepreneurship Theory and Practice*, Vol. 36, No. 1, pp.11–40.
- Motowidlo, S.J., Packard, J.S. and Manning, M.R. (1986) 'Occupational stress: its causes and consequences for job performance', *Journal of Applied Psychology*, Vol. 71, No. 4, pp.618–629.
- Muntaner, C., Borrell, C., Benach, J., Pasarín, M.I. and Fernandez, E. (2003) 'The associations of social class and social stratification with patterns of general and mental health in a Spanish population', *International Journal of Epidemiology*, Vol. 32, No. 6, pp.950–958.
- Nielsen, K.J., Pedersen, A.H., Rasmussen, K., Pape, L. and Mikkelsen, K.L. (2013) 'Work-related stressors and occurrence of adverse events in an ED', *The American Journal of Emergency Medicine*, Vol. 31, No. 3, pp.504–508.
- Oliver, R.L. (Ed.) (1997) *Satisfaction*, McGraw-Hill, New York.
- Omorede, A., Thorgren, S. and Wincent, J. (2015) 'Entrepreneurship psychology: a review', *International Entrepreneurship and Management Journal*, Vol. 11, No. 4, pp.743–768.
- Pailot, P. (1999) 'Freins psychologiques et transmission d'entreprise: un cadre d'analyse fondé sur la méthode biographique [Psychological blocages and business transmission: a framework based on biographical method]', *Revue Internationale des PME*, Vol. 12 No. 3, pp.9–32.
- Parslow, R.A., Jorm, A.F., Christensen, H., Rodgers, B., Strazdins, L. and D'Souza, R.M. (2004) 'The associations between work stress and mental health: a comparison of organizationally employed and self-employed workers', *Work & Stress*, Vol. 18, No. 3, pp.231–244.
- Patzelt, H. and Shepherd, D.A. (2011) 'Negative emotions of an entrepreneurial career: self-employment and regulatory coping behaviors', *Journal of Business Venturing*, Vol. 26, No. 2, pp.226–238.
- Perreault, W.D. (1975) 'Controlling order-effect bias', *The Public Opinion Quarterly*, Vol. 39, No. 4, pp.544–551.
- Pikhart, H., Bobak, M., Siegrist, J., Pajak, A., Rywik, S., Kyshegyi, J., Gostautas, A., Skodova, Z. and Marmot, M. (2001) 'Psychosocial work characteristics and self rated health in four post-communist countries', *Journal of Epidemiology and Community Health*, Vol. 55, No. 9, pp.624–630.

- Ponnelle, S., Vaxevanoglou, X. and Garcia, F. (2012) 'L'usage des outils d'évaluation du stress au travail: perspectives théoriques et méthodologiques [Use of occupational stress measurements: theoretical and methodological perspectives]', *Le Travail Humain*, Vol. 75, No. 2, pp.179–213.
- Prottas, D.J. and Thompson, C.A. (2006) 'Stress, satisfaction, and the work-family interface: a comparison of self-employed business owners, independents, and organizational employees', *Journal of Occupational Health Psychology*, Vol. 11, No. 4, pp.366–378.
- Quesnel-Vallée, A. (2007) 'Self-rated health: caught in the crossfire of the quest for "true" health?', *International Journal of Epidemiology*, Vol. 36, No. 6, pp.1161–1164.
- Rahim, A. (1996) 'Stress, strain, and their moderators: an empirical comparison of entrepreneurs and managers', *Journal of Small Business Management*, Vol. 34, No. 1, pp.46–58.
- Rauch, A., Unger, J. and Rosenbusch, N. (2007) 'Entrepreneurial stress and long term survival: is there a causal link?', *Frontiers of Entrepreneurial Research*, Vol. 27, No. 4, Article 2, 9pp.
- Reich, W.P., Parrella, D.P. and Filstead, W.J. (1988) 'Unconfounding the hassles scale: external sources versus internal responses to stress', *Journal of Behavioral Medicine*, Vol. 11, No. 3, pp.239–249.
- Reis, H.T. and Gable, S.L. (2000) 'Event sampling and other methods for studying everyday experience', in Reis, H.T. and Judd, C.M. (Eds.): *Handbook of Research Methods in Social and Personality Psychology*, pp.190–222, Cambridge University Press, New York.
- Rentsch, J. (1990) 'Climate and culture: interaction and qualitative differences in organizational meanings', *Journal of Applied Psychology*, Vol. 75, No. 6, pp.668–681.
- Rice, R.W., McFarlin, D.B. and Bennett, D.E. (1989) 'Standards of comparison and job satisfaction', *Journal of Applied Psychology*, Vol. 74, No. 4, pp.591–598.
- Richard, C. and Gosselin, E. (2010) 'Controverse relative à la relation entre le stress et la performance au travail: recherche d'explications [Stress and job performance controversy: search for explanations]', *Psychologie du Travail et des Organisations*, Vol. 16, No. 1, pp.5–25.
- Rietveld, C.A., van Kippersluis, J.L.W. and Thurik, A.R. (2013) *Self-Employment and Health: Barriers or Benefits?*, Tinbergen Institute Discussion Paper, No. TI 13-129/V, Amsterdam/Rotterdam.
- Robinson, M.D. and Clore, G.L. (2002) 'Belief and feeling: evidence for an accessibility model of emotional self-report', *Psychological Bulletin*, Vol. 128, No. 6, pp.934–960.
- Roger, P. and Schatt, A. (2015) 'Entrepreneur's overconfidence, private benefits and the market performance of the firm', *International Journal of Entrepreneurship and Small Business*, Vol. 24, No. 3, pp.289–301.
- Russell, J.A. (2003) 'Core affect and the psychological construction of emotion', *Psychological Review*, Vol. 110, No. 1, pp.145–172.
- Sanandrés Domínguez, E. (2013) 'Work stressors and creativity', *M@n@gement*, Vol. 16, No. 4, pp.479–503.
- Scherer, K.R. (1990) 'Stress et coping : nouvelles approches [Stress and coping: new approaches]', *Cahiers Psychiatriques Genevois*, No. 9, pp.147–154.
- Scherer, K.R. (1994) 'Emotion serves to decouple stimulus and response', in Ekman, P. and Davidson, R.J. (Eds.): *The Nature of Emotion: Fundamental Questions*, pp.127–130, Oxford University Press, New York.
- Scherer, K.R. (1995) 'In defense of a nomothetic approach to studying emotion-antecedent appraisal', *Psychological Inquiry*, Vol. 6, No. 3, pp.241–248.
- Schimmack, U. (2003) 'Affect measurement in experience sampling research', *Journal of Happiness Studies*, Vol. 4, No. 1, pp.79–106.
- Schindehutte, M., Morris, M. and Allen, J. (2006) 'Beyond achievement: entrepreneurship as extreme experience', *Small Business Economics*, Vol. 27, Nos. 4–5, pp.349–368.

- Schjoedt, L. (2009) 'Entrepreneurial job characteristics: an examination of their effect on entrepreneurial satisfaction', *Entrepreneurship Theory and Practice*, Vol. 33, No. 3, pp.619–644.
- Schroeder, D.H. and Costa, P.L., Jr. (1984) 'Influence of life event stress on physical illness: substantive effects or methodological flaws?', *Journal of Personality and Social Psychology*, Vol. 46, No. 4, pp.853–863.
- Schumm, W.R. (1999) 'Satisfaction', in Levinson, D. et al (Eds.): *Encyclopedia of Human Emotions*, pp.583–590, Macmillian, New York.
- Schwarz, N., Knäuper, B., Hippler, H. J., Noelle-Neumann, E. and Clark, L. (1991) 'Rating scales numeric values may change the meaning of scale labels', *Public Opinion Quarterly*, Vol. 55, No. 4, pp.570–582.
- Scollon, C.N., Kim-Prieto, C. and Diener, E. (2003) 'Experience sampling: promises and pitfalls, strengths and weaknesses', *Journal of Happiness Studies*, Vol. 4, No. 1, pp.5–34.
- Scully, J.A., Tosi, H. and Banning, K. (2000) 'Life event checklists: revisiting the social readjustment rating scale after 30 years', *Educational and Psychological Measurement*, Vol. 60, No. 6, pp.864–876.
- Shapiro, A. (1984) 'The entrepreneurial event', in Kent, C.A. (Ed.): *The Environment of Entrepreneurship*, pp.21–40, Lexington Books, Lexington.
- Shaver, P., Schwartz, J., Kirson, D. and O'Connor, C. (1987) 'Emotion knowledge: further exploration of a prototype approach', *Journal of Personality and Social Psychology*, Vol. 52, No. 6, pp.1061–1086.
- Smith, P.B., Peterson, M.F. and Misumi, J. (1994) 'Event management and work team effectiveness in Japan, Britain and USA', *Journal of Occupational and Organizational Psychology*, Vol. 67, No. 1, pp.33–43.
- Stephan, U. and Roesler, U. (2010) 'Health of entrepreneurs versus employees in a national representative sample', *Journal of Occupational and Organizational Psychology*, Vol. 83, No. 3, pp.717–738.
- Strauss, A. and Corbin, J. (Ed.) (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, Sage Publications, Newbury Park.
- Strauss, B. and Neuhaus, P. (1997) 'The qualitative satisfaction model', *International Journal of Service Industry Management*, Vol. 8, No. 3, pp.236–249.
- Taylor, S.E. (1991) 'Asymmetrical effects of positive and negative events: the mobilization-minimization hypothesis', *Psychological Bulletin*, Vol. 110, No. 1, pp.67–85.
- Tetrick, L.E., Slack, K.J., Da Silva, N. and Sinclair, R.R. (2000) 'A comparison of the stress – strain process for business owners and nonowners: differences in job demands, emotional exhaustion, satisfaction, and social support', *Journal of Occupational Health Psychology*, Vol. 5, No. 4, pp.464–476.
- Thurik, R., Khedhaouria, A., Torrès, O. and Verheul, I. (2016) 'ADHD symptoms and entrepreneurial orientation of small firm owners', *Applied Psychology*.
- Tomasino, D. (2007) 'The psychophysiological basis of creativity and intuition: accessing 'the zone' of entrepreneurship', *International Journal of Entrepreneurship and Small Business*, Vol. 4, No. 5, pp.528–542.
- Torrès, O. (2011) 'The silent and shameful suffering of bosses: layoffs in SME', *International Journal of Entrepreneurship and Small Business*, Vol. 13, No. 2, pp.181–192.
- Torrès, O. (2012) 'Premiers résultats d'une étude épidémiologique sur la santé des dirigeants de PME [Preliminary results of an epidemiologic study on the health of small business owners]', in Torrès, O. (Ed.): *La santé du dirigeant, de la souffrance patronale à l'entrepreneuriat salutaire*, pp.191–209, De Boeck, Bruxelles.
- Torrès, O. (2013) 'Health of entrepreneurs', in Carayannis, E.G. (Ed.): *Encyclopedia of Creativity, Invention, Innovation, and Entrepreneurship*, Vol. 1, pp.827–832, Springer, New York.

- Torrès, O. and Lechat, T. (2012) 'L'échelle des événements de vie de l'activité entrepreneuriale [The life events scale of the entrepreneurial activity]', in Torrès, O. (Ed.): *La santé du dirigeant: de la souffrance patronale à l'entrepreneuriat salutaire*, pp.159–176, De Boeck, Bruxelles.
- Twisk, J. and de Vente, W. (2002) 'Attrition in longitudinal studies: how to deal with missing data', *Journal of Clinical Epidemiology*, Vol. 55, No. 4, pp.329–337.
- Ucbasaran, D., Shepherd, D.A., Lockett, A. and Lyon, S.J. (2013) 'Life after business failure: the process and consequences of business failure for entrepreneurs', *Journal of Management*, Vol. 39, No. 1, pp.163–202.
- Uy, M.A., Foo, M.D. and Aguinis, H. (2010) 'Using experience sampling methodology to advance entrepreneurship theory and research', *Organizational Research Methods*, Vol. 13, No. 1, pp.31–54.
- Van de Ven, A.H. and Engleman, R.M. (2004) 'Event-and outcome-driven explanations of entrepreneurship', *Journal of Business Venturing*, Vol. 19, No. 3, pp.343–358.
- van der Hulst, M. (2003) 'Long work hours and health', *Scandinavian Journal of Work, Environment & Health*, Vol. 29, No. 3, pp.171–188.
- Vinberg, S., Gundersen, K.T., Nordenmark, M., Larsson, J. and Landstad, B.J. (2012) 'Entrepreneurs' health – the importance of psychosocial working conditions and individual factors', *International Journal of Entrepreneurial Venturing*, Vol. 4, No. 4, pp.374–390.
- Vinokur, A. and Caplan, R.D. (1986) 'Cognitive and affective components of life events: their relations and effects on well-being', *American Journal of Community Psychology*, Vol. 14, No. 4, pp.351–370.
- Vo, L.-C., Mounoud, E. and Rose, J. (2012) 'Dealing with the opposition of rigor and relevance from Dewey's pragmatist perspective', *M@n@gement*, Vol. 15, No. 4, pp.367–390.
- Volery, T. and Pullich, J. (2010) 'Healthy entrepreneurs for healthy businesses: an exploratory study of the perception of health and well-being by entrepreneurs', *New Zealand Journal of Employment Relations*, Vol. 35, No. 1, pp.4–16.
- Vossel, G. (1987) 'Stress conceptions in life event research: towards a person-centred perspective', *European Journal of Personality*, Vol. 1, No. 3, pp.123–140.
- Warren, J.R. and Halpern-Manners, A. (2012) 'Panel conditioning in longitudinal social science surveys', *Sociological Methods & Research*, Vol. 41, No. 4, pp.491–534.
- Webster, J.R., Beehr, T.A. and Love, K. (2011) 'Extending the challenge-hindrance model of occupational stress: the role of appraisal', *Journal of Vocational Behavior*, Vol. 79, No. 2, pp.505–516.
- Weiss, H.M. (2002) 'Deconstructing job satisfaction: separating evaluations, beliefs and affective experiences', *Human Resource Management Review*, Vol. 12, No. 2, pp.173–194.
- Weiss, H.M. and Beal, D. (2005) 'Reflections on affective events theory', in Askanasy, N.M. et al. (Eds.): *Research on Emotion in Organizations: The Effect of Affect in Organizational Settings*, Vol. 1, pp.1–21, Elsevier, Oxford.
- Weiss, H.M. and Cropanzano, R. (1996) 'Affective events theory: a theoretical discussion of the structure, causes and consequences of affective experiences at work', in Staw, B.M. and Cummings, L.L. (Eds.): *Research in Organizational Behavior*, Vol. 18, pp.1–74, JAI Press, Greenwich.
- Wennekers, S. and Thurik, R. (1999) 'Linking entrepreneurship and economic growth', *Small Business Economics*, Vol. 13, No. 1, pp.27–56.
- Wethington, E. (2007) 'Life events scale', in Fink, G. (Ed.): *The Encyclopedia of Stress*, Vol. 2, pp.603–607, Academic Press/Elsevier, Oxford.
- Wicks, A.C. and Freeman, R.E. (1998) 'Organization studies and the new pragmatism: positivism, anti-positivism, and the search for ethics', *Organization Science*, Vol. 9, No. 2, pp.123–140.
- Williams, A. (1985) 'Stress and the entrepreneurial role', *International Small Business Journal*, Vol. 3, No. 4, pp.11–25.

- Wincent, J. and Örtqvist, D. (2009) 'A comprehensive model of entrepreneur role stress antecedents and consequences', *Journal of Business and Psychology*, Vol. 24, No. 2, pp.225–243.
- Wright, M. and Marlow, S. (2012) 'Entrepreneurial activity in the venture creation and development process', *International Small Business Journal*, Vol. 30, No. 2, pp.107–114.
- Wu, K.K. and Lam, D.J. (1993) 'The relationship between daily stress and health: replicating and extending previous findings', *Psychology and Health*, Vol. 8, No. 5, pp.329–344.

## **Notes**

- 1 Consistent with Cardon et al. (2012) and previous authors, we use the terms 'emotion' and 'affect' interchangeably to embrace the general phenomenon of subjective sentiment.
- 2 Another method, although highly popular, has not been selected because it is exclusively qualitative: the critical incident technique (Flanagan, 1954).
- 3 The development of this methodology is attributed to Csikszentmihalyi et al. (1977).
- 4 This neologism echoes that of *motivators*, which were created by Herzberg et al. (1959/1964) to designate any factor that positively influences motivation at work.
- 5 Of the respondents who participated, 11 were ultimately removed after session no. 11 (where  $n = 292$ ) because of missing data.