

Stressed but happy? A Meta-Analysis of Entrepreneurship and Well-being

Ute Stephan, King's College London, UK, ute.stephan@kcl.ac.uk

Andreas Rauch, University of Sydney, Australia, andreas.rauch@sydney.edu.au

& *Isabella Hatak*, University of St Gallen, Switzerland, isabella.hatak@unisg.ch

Draft work in progress 2018– all comments welcome, please do not circulate

Abstract

It is uncertain whether entrepreneurship is a career choice that results in higher well-being than paid employment with existing research reporting conflicting findings. We suggest the entrepreneurship-wellbeing relationship is contingent on how well-being is conceptualized. Building on arguments from dissonance theory, we propose self-justification processes lead to reappraising of life and work situations. As a consequence, we expect entrepreneurs to report higher well-being than non-entrepreneurs even though they have more stressful work conditions and more mental health issues. We conduct a meta-analysis of existing research and differentiate four components of well-being: cognitive (i.e., satisfaction) and affective components, the latter distinguished by their valence as well-being or ill-being (distress and mental health issues). Based on the coding of 78 samples from 42 papers, preliminary results find that entrepreneurs report higher satisfaction and affective well-being (sample size weighted mean correlations $r=.059$ and $r=.035$) than non-entrepreneurs but also more stressful working conditions ($r=.094$). There was no difference for indicators of ill-being. Synthesizing empirical evidence we find that entrepreneurs experience higher satisfaction and affective well-being than non-entrepreneurs. The differential relationship of entrepreneurship with well-being and ill-being highlights the importance of adopting a component view of well-being, which helps to explain the conflicting findings in past research on entrepreneurship and well-being. Nevertheless, the well-being benefits to entrepreneurship are small overall and stressors are high. Both should be borne in mind when advocating entrepreneurship as a career choice.

Introduction

Researchers are increasingly paying attention to entrepreneurs' well-being – their experience of “living in a state that is in some sense good” (Warr, 2013, p.77). This is because entrepreneurs' well-being is linked to a range of desirable outcomes from opportunity recognition to firm performance (see Stephan, 2018 for a review), thus contributing to the initiation and sustainability of entrepreneurship, which benefits economies' competitiveness (van Praag & Versloot, 2007). At the individual level, higher well-being has been advocated as one of the advantages of entrepreneurship over paid employment (Benz & Frey, 2008). Consequently, individuals starting a business often expect to achieve higher well-being than in paid employment; once their business is running, they make financially costly decisions to protect their well-being and use their well-being as one yardstick against which to measure their success (Shepherd, Wiklund, & Haynie, 2009; Wach, Stephan, & Gorgievski, 2016).

To date, the interest in entrepreneurs' well-being continues (Stephan, 2018); however, much uncertainty remains as to whether entrepreneurship is a career choice that results in higher well-being than paid employment. Conceptually, researchers agree that entrepreneurship is more stressful than paid employment (Cardon & Patel, 2015; Patzelt & Shepherd, 2011; Rauch, Fink, & Hatak, 2018). However, there is disagreement about the extent to which characteristics of entrepreneurs' work such as their greater autonomy and of their personality such as their confidence and optimism alter the effects of stressors on their well-being (Baron, Franklin, & Hmieleski, 2016; Stephan, 2018; Totterdell, Wood, & Wall, 2006). Empirically, several studies comparing entrepreneurs and employees find well-being advantages for entrepreneurs (Baron et al., 2016; Benz & Frey, 2008; Millán, Hessels, Thurik, & Aguado, 2013), others provide evidence for well-being advantages of employees (Brechon, Czernichow, Leroy, & Blum-Boisgard, 2005; Buttner, 1992; Cardon & Patel,

2015) and still others find no difference (Jamal, 1997; Jang, Jang, Bae, Shin, & Park, 2015; Lindström, Ali, & Rosvall, 2012).

Hence overall, research on entrepreneurship and well-being appears fragmented. This may be because the research stream has evolved in parallel in different disciplines such as epidemiology, psychology, management and economics, leading to the use of diverse 1) conceptualizations and 2) indicators to measure well-being, and 3) neglecting important contingencies. Thus, there is a strong need to differentiate cognitive and affective components of well-being as well as to consider their valence (positive and negative). For example, entrepreneurship has been associated with both positive emotions and satisfaction, and the absence of negative emotions as characteristic for hedonic well-being – however, and more recently, entrepreneurship has also been linked to (fruitful) negative emotions (Foo, Uy, & Baron, 2009; Hatak & Snellman, 2017). This raises the question of whether and to what extent entrepreneurship is an occupation that potentially unites extreme positive and negative well-being components as opposed to employment. Moreover, the features of entrepreneurship that make it demanding and stressful or alternatively enable well-being such as autonomy may vary in strength depending on country-level institutional characteristics such as business regulations and culture or individual-level characteristics such as gender or motives; leading to stronger or weaker relations of entrepreneurship with well-being.

Thus, it remains unclear whether entrepreneurship is more strongly related to well-being than employment, whether some types and indicators of well-being have stronger effects in their relationship to entrepreneurship than employment, and which contingencies may influence these relationships. Hence to date it is not clear whether we can legitimately hail higher well-being as one of the key benefits of being an entrepreneur that may counterbalance the on average lower earnings compared to paid employment some research suggests (Benz & Frey, 2004; van Praag & Versloot, 2007 for a review).

In this study, we address the entrepreneurship-wellbeing relationship by meta-analytically integrating the results of more than four decades of well-being research. A meta-analysis offers a quantitative synthesis of existing research, an estimate of population effects and allows for the correction of statistical artefacts, presenting an important step towards evidence-based entrepreneurship. We complement our meta-analysis on 78 independent samples with exploratory qualitative analyses of studies which point to important sources of heterogeneity, which help make sense of non-significant findings and smaller effects and offer inspiration for future research.

Our study contributes to the literature in at least three ways: First, our meta-analysis integrates findings across studies and research traditions such as clinical epidemiology (Kessler et al., 2002), psychology (Diener, Lucas, & Oishi, 2018), management (Ganster & Rosen, 2013) and economics (Blanchflower & Oswald, 1998, 2011). By providing information about the generalizability of the entrepreneurship-wellbeing relationship, our meta-analysis provides an estimate of the distinctiveness of entrepreneurial well-being .

Second, we advance well-being research by developing a framework that views the entrepreneurship-wellbeing relationship contingent on how well-being is conceptualized. Specifically we introduce a component view of well-being which differentiates and hypothesises distinct effects of cognitive and affective aspects of well-being as well as the valence of well-being (positive and negative affect) thereby developing a new perspective on the unique relationship of entrepreneurship with well-being. In line with our predictions we find a small but robust positive relationship of entrepreneurship and well-being when well-being is captured as satisfaction and positive affective well-being, but no relationships between entrepreneurship and psychological distress and mental health issues, respectively. Yet, our meta-analytic findings indicate that entrepreneurs experience more stressful working conditions. Thus, while entrepreneurs experience more stressors in their work, they feel no

more or no less distressed than paid employees – and are even more satisfied and happy. These findings are consistent with our framework the component-view of well-being and help to develop richer theory and more accurate predictions about entrepreneurship and well-being.

Third, by adopting a contingency perspective, we identify important sources of heterogeneity (e.g., type of entrepreneurship, type of comparison groups, institutional characteristics) and temporality of well-being effects. These provide inspiration for new research on the boundary conditions of the entrepreneurship-well-being relationship. For instance, whether and to what extent ‘underdog’ entrepreneurs (e.g., necessity entrepreneurs in disadvantaged contexts) may be able to derive well-being benefits. Our work also nuances the many ways in which mental disorders are associated with entrepreneurship; as a result of strain-related processes arising from entrepreneurship, a determinant of entrepreneurship, or a coping mechanism.

Theoretical Background

Entrepreneurship

We draw on the occupational definition of entrepreneurship which regards entrepreneurs as those individuals who work for their own account and risk (Hébert & Link, 1982). It is a broad view of entrepreneurship that includes the self-employed as well as entrepreneurs employing others and which is typically used in epidemiological studies (Gorgievski & Stephan, 2016).

Well-being

Well-being is seen as central to effective human functioning (Ryan & Deci, 2001). It is most commonly understood in terms of subjective well-being (also termed hedonic well-being or happiness) derived from attaining pleasure and avoiding pain (Kahneman, Diener, & Schwarz, 1999; Ryan & Deci, 2001). High subjective well-being consists of high life satisfaction; high positive affect, and low negative affect (Diener et al., 2018; Diener, Suh, Lucas, & Smith, 1999). Life satisfaction contains a strong cognitive evaluative component as “people’s explicit and conscious evaluations of their life” (Diener et al. 2018, p.15). By contrast, affect is an emotion-based experience. Positive affect entails experiences of pleasant and desirable feelings and moods (Diener et al., 2018) such as joy, happiness and contentment. The experience of negative affect consists of unpleasant and undesirable feelings and moods (Diener et al., 2018) such as feeling anxious, sad or depressed. The experience of negative affect is often the focus of epidemiological studies and termed psychological distress, whereas persistent and significant psychological distress and impairment of a personal functioning characterize mental disorders (Kessler et al., 2002).

In contrast to a general sense of well-being as outlined above, measures of domain-specific well-being centre on life domains such as work-related affect or job satisfaction. General and domain-specific well-being are closely related (Bowling, Eschleman, & Wang, 2010). Aside from hedonic well-being, eudaimonic well-being is a state of “optimal psychological functioning and experience” (Ryan & Deci, 2001, p.142) that includes a sense of meaning, thriving and self-realization (Ryan & Deci, 2001). Research comparing entrepreneurs and employees’ well-being is dominated by indicators of subjective/hedonic well-being.

Entrepreneurship and Well-being

The nature of work in which individuals engage is closely related to their well-being, in part because individuals spend large amounts of their lifetime at work (Warr, 1987). Thus, differences in the nature of work have been the focus of research to explain differences in the well-being between entrepreneurs and employees. Most researchers seem to agree that working as an entrepreneur is an extremely stressful job – in many ways more extreme than paid employment (Cardon & Patel, 2015; Patzelt & Shepherd, 2011; Rauch et al., 2018). Indeed, entrepreneurs face numerous work-related stressors ranging from intense workload, long working hours, lacklustre demands and financial problems to work-family conflict (Stephan, 2018). Compared to employees, entrepreneurs are argued to experience their workload as more intense and have longer working hours, which in turn fuel work-family conflict – because they are directly responsible for how well the firm is doing, whereas employees are less accountable for their organization's performance. Such stressful working conditions lead to experience of psychological and physical strain such as exhaustion and tiredness (see stressor-strain models, e.g., Koeske & Koeske, 1993), and thus over time imply lower well-being for entrepreneurs compared to paid employment.

However, research disagrees about the extent to which the negative effects of such stressful work conditions on well-being may be offset by the higher amount of work-related autonomy that entrepreneurs' enjoy and possibly by their personality characteristics that help them to handle their stressful entrepreneurial environment (Baron et al., 2016; Stephan, 2018; Totterdell et al., 2006). Stressful working conditions may be experienced as positively challenging when they are accompanied by autonomy, providing individuals with a sense of control over their work, enabling them to learn new skills, and developing a sense of mastery (Karasek & Theorell, 1990). Moreover, some evidence suggests that entrepreneurs' have more emotionally stable personalities and higher psychological capital (self-efficacy, hope, resilience, optimism) which allow them to better cope with stressful work conditions (Baron

et al., 2016). Thus entrepreneurial autonomy and personality may mitigate differences in well-being between entrepreneurs and employees.

Rather than hypothesizing about aggregate well-being differences between entrepreneurs and employees, we build on the above and suggest that to more clearly understand whether and how entrepreneurship relates to well-being we need to consider the nature of well-being. Consequently, we discuss each of the components of well-being (satisfaction, affective well-being, psychological distress and mental health issues).

Entrepreneurship and Satisfaction

Satisfaction as the cognitive aspect of well-being – like any cognitive evaluation process – may be susceptible to bias, in particular cognitive dissonance may lead to higher job and life satisfaction among entrepreneurs compared to those in paid employment.

Cognitive dissonance describes processes of self-justification of choices after these choices have been made, and especially if choices were made voluntarily (Festinger, 1964).

Dissonance is a state of psychological tension often involving a sense of regret of not having chosen another option and after having expended significant effort towards the chosen option (Elliot & Devine, 1994). People are motivated to alleviate this psychological tension and typically do so through adjusting their evaluation and selectively seeking confirmative information (Festinger, 1964; for reviews of the theory Harmon-Jones & Harmon-Jones, 2007; Hinojosa, Gardner, Walker, Cogliser, & Gullifor, 2016).

Considering the sheer amount of time and other resources that entrepreneurs invest first in starting their business and then day-to-day in running their businesses, being dissatisfied with their job or life would create significant cognitive dissonance between their day-to-day actions and their evaluation of those actions as satisfying. Thus, entrepreneurs are likely motivated to avoid dissonance by adjusting and re-appraising their life and work

situation, e.g., through emphasizing as positive the many freedoms being an entrepreneur gives them to choose on what to work, with whom to work and when to work. Or they may selectively expose themselves to affirmative information, e.g., through socializing with other entrepreneurs. The alternative way of reducing dissonance would be to change their behaviour, i.e., disband their business and stop being an entrepreneur. However, adjusting cognitions and evaluations is typically the preferred route of dissonance reduction as it is easier compared to changing behaviour (Festinger, 1964).

Employees are less likely to be exposed to conditions that would lead them to experience dissonance in the first place, and if they experience dissonance their effect would be much less pronounced leading to less need to ‘upgrade’ their satisfaction. This is because employees can easily justify their actions that they consider dissatisfying by pointing to organizational constraints such as organizational culture or supervisors that required them to act a certain way. Moreover, employees face less personal pressure for ‘satisfaction upgrades’ as compared to entrepreneurs whose investments are typically considered larger, e.g., they often put up their family home as collateral to take out loans for their business.

Hypothesis 1: There is a positive relationship between entrepreneurship and satisfaction such that entrepreneurs experience higher satisfaction compared to employees.

Entrepreneurship, Affective Well-Being and Psychological Distress

Our discussion of the affective components of subjective well-being is guided by considering affective well-being and ill-being (i.e., psychological distress) as separate albeit related dimensions. The epidemiological and mental health literatures provide evidence for this dimensional view of affective well-being and psychological distress (Massé et al., 1998; Veit & Ware, 1983) as does research that finds differential relationships for the two dimensions with biological correlates (Ryff et al., 2006). The dimensional view is also corroborated by more general research into the nature of general affect (Tellegen, Watson, &

Clark, 1999; Watson & Tellegen, 1985) and work-related affect (Warr, Bindl, Parker, & Inceoglu, 2014). It means that affective well-being is not simply the inverse of psychological distress, and that we may expect entrepreneurship to relate positively to both affective well-being and psychological distress.

Affective well-being is rooted in repeated experiences of positive feelings and emotions over time. Two interrelated mechanisms lead us to expect that entrepreneurs are more likely to experience positive feelings repeatedly compared to paid employees. First, features of entrepreneurs' personality such as high emotional stability and psychological capital pre-dispose them to experience more positive emotions (Baron et al., 2016; Baron, Tang, & Hmieleski, 2011). Second, these personality aspects make it also more likely that entrepreneurs view their stressful working conditions as positively challenging than employees. For instance, they may see long working hours as a signal that the business is doing well, because orders are coming in and they do not have to worry about how to pay their bills (Bradley & Roberts, 2004; Stephan, 2018). This is in line with the so-called challenge-hindrance stressor framework, research on which suggests that stressors which imply immediate strain but also a long-term prospect for personal growth (such as overtime, intense workload) can have positive well-being consequences (LePine, Podsakoff, & LePine, 2005; LePine, LePine, & Jackson, 2004).

Hypothesis 2: There is a positive relationship between entrepreneurship and affective well-being such that entrepreneurs experience higher affective well-being compared to employees.

The bi-dimensionality of affective well-being and psychological distress means that while it is possible for entrepreneurs to experience more positive affective well-being as compared to the employed, they may simultaneously still also experience more psychological distress. Two complementary mechanisms lead us to expect that entrepreneurs may indeed also experience more distress than employees. First, such greater distress is a reaction to the

accumulation of strain arising from the more demanding work that entrepreneurs are engaged in. Indeed there is substantial evidence that such stressful working conditions are associated with strain, and ultimately even poorer health (for wider evidence see Alarcon, 2011; Ganster & Rosen, 2013; Kivimäki et al., 2015; Peters, McEwen, & Friston, 2017, for research on entrepreneurs Stephan, 2018). Second, characteristics of entrepreneurs' personality also predispose them to continuously challenge themselves and set ever higher goals that due to their optimism and belief in their abilities they feel they can achieve with hard work (for related evidence see Fisher, Maritz, & Lobo, 2013; Hmieleski & Corbett, 2008; Spivack & McKelvie, 2018). Thus entrepreneur, to a larger extent than employees, may create cycle of increasing stressors, strain and distress.

Hypothesis 3: There is a positive relationship between entrepreneurship and psychological distress such that entrepreneurs experience higher psychological distress compared to employees.

Entrepreneurship and Mental Health Issues

The relationship of entrepreneurship with mental health issues is likely to be positive as a result of the accumulation of stress-strain processes over time. The continuous exposure to uncertainty in entrepreneurship is likely to lead to wear and tear of the body over time – reflected in state of allostatic load – which has been linked to the development of mental health issues (McEwen, 2004; Peters et al., 2017). Supporting this view, entrepreneurs have been found to be more vulnerable to experiencing allostatic load (Patel, Wolfe, & Williams, 2018). At the same time, we may also see those with mental health issues to self-select into entrepreneurship because they experience discrimination in the labor market or because entrepreneurship gives them more flexibility to adjust to their condition (Wiklund, Hatak, Patzelt, & Shepherd, 2018).

Hypothesis 4: There is a positive relationship between entrepreneurship and mental health issues such that entrepreneurs experience more mental health problems and disorders compared to employees.

Entrepreneurship and Stressful Working Conditions

So far our hypotheses on the relationship of entrepreneurship and well-being draw on past literature suggesting that entrepreneurship is positively associated with stressful working conditions (Cardon & Patel, 2015; Patzelt & Shepherd, 2011; Rauch et al., 2018; Stephan, 2018). We seek to provide first meta-analytic evidence on this relationship.

Hypothesis 5: There is a positive relationship between entrepreneurship and stressful working conditions such that entrepreneurs experience more of these conditions compared to employees.

Methodology

Identification and Coding of Studies

In a first step, we used Web of Science to retrieve relevant studies. Web of Science is a comprehensive database which covers paper publications and conference proceedings across disciplines including entrepreneurship, management, medicine, epidemiology, occupational health, economics, and psychology. We used a range of keywords, specifying entrepreneurs and self-employed and their synonyms combined with a comprehensive set of search terms for well-being, mental health, distress and their synonyms (the full list of 67 search terms is available upon request). We applied the keywords to search in abstract, titles and keywords for sources published between 1950 and 02 Februar 2018. The searches retrieved 2,402 results.

Second, the studies were considered for inclusion in the meta-analysis, based on reading the title and abstract. To be included, sources had to be empirical quantitative papers that measured entrepreneurs' well-being and compared it to a group of non-entrepreneurs (typically paid employees but we also considered population representative studies).

Moreover, studies had to report the statistical information required to calculate a meta-analysis. Following this procedure, we identified 149 studies.

Third, we read and coded the studies including sample size and available characteristics of entrepreneurs and comparison group, country context and year of data-collection, 29 different measures of well-being, research design, reliability and validity of the measures used. To date, 78 independent samples from 42 papers are coded which provided sufficient data to for running the meta-analysis. We also engaged in additional qualitative coding of studies. This allowed us to contextualize findings and consider findings of studies that did not provide sufficient statistical information to compute effect sizes for the meta-analyses.

Variable Coding: Components of Well-being

To test our hypotheses we differentiated four types or components of well-being in line with our conceptual framework and building on established research on well-being (also Busseri, 2018). They are distinguished based on an emphasis on cognitive components (i.e., satisfaction) and affective components. The latter are further differentiated by their valence, i.e., whether they measure affective well-being or ill-being (distress and mental health issues). *Satisfaction* includes measures of life satisfaction (e.g., measured with a question such as ‘Overall how satisfied are you with your life?’) and job satisfaction. The two indicators have been found to be highly correlated (Bowling et al., 2010), especially for entrepreneurs due to the centrality of work in entrepreneurs’ life (Loewe, Araya-Castillo, Thieme, & Manuel Batista-Foguet, 2015; Thompson, Kopelman, & Schriesheim, 1992).

Affective well-being includes measures that contain positive affect such as ‘happy’, ‘contented’, ‘energized’.

Psychological distress (affective ill-being) include measures of feeling tired, depressed, anxious, or angry; find job stressful/perceived stress; and burnout including emotional exhaustion and depersonalization.

We include measures of clinically significant mental health issues and mental impairments in a separate category of *mental health issues*. It includes studies tracing suicide, measuring drug abuse including alcohol abuse and gambling, trauma, psychosomatic complaints as well as overall self-reports of poor mental health.

We also coded *stressful work conditions* which guided by extant models of work characteristics (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Karasek & Theorell, 1990) includes workload, poor physical work environment, role overload, role insufficiency, role ambiguity, role conflict, work-home conflict, and sense of a lack of accomplishment.

Results

Meta-analytic Results: The Size of the Entrepreneurship-Well-being Relationship

We performed a meta-analysis based on the approach suggested by Schmidt and Hunter (2014). Table 1 displays our results. It presents the entrepreneurship-well-being effects as sample-bias corrected correlations r along with their confidence interval, the number of individuals N and the number of studies k that these effects are estimated on as well as the amount of variation that is due to sampling error. Satisfaction is the outcome that has been most frequently studied (56 studies).

Table 1. Correlations between entrepreneurship and well-being and between entrepreneurship and stressful work conditions

	N	K	r	Confidence interval (95%)	% Variance due to sampling error
Type of Well-being					
Satisfaction	264,487	56	.059	.040 to .078	04%
Affective well-being	45,231	10	.035	.007 to .062	11%
Psychological distress (affective ill-being)	66,599	16	-.003	-.024 to .017	14%
Mental health issues	4,801,902	12	.002	-.002 to .005	08%
Stressful working conditions	16,184	16	.094	.001 to .188	02%

The results support Hypotheses 1 and 2, which proposed positive relationships between entrepreneurship and satisfaction and affective well-being, respectively. While the effects are low given the high amount of attention the concept of satisfaction and positive affect have received in the entrepreneurship literature, these overall effects should still be interpreted carefully. Given the increasing relevance of contextualizing entrepreneurship and therefore also well-being, it is likely that the size of effects will vary significantly once we accounted for moderators. However, the number of studies in the meta-analysis is currently too small to conduct statistical tests for moderation.

There is no significant relationship of entrepreneurship with psychological distress as the confidence interval for the effect includes zero, suggesting moderating influences. Thus, we reject Hypothesis 3.

Similarly, the relationship between entrepreneurship and mental health issues was not significant, leading us to reject Hypothesis 4. However, the effect estimate for mental health issues is driven by one large study with a sample of 4,776,135 individuals studying suicide (Toivanen, Griep, Mellner, Vinberg, & Eloranta, 2016). Excluding this study results in a

significant effect size of .049, i.e. suggesting that entrepreneurs suffer from more mental health issues than paid employees.

The relation between entrepreneurship and stressful working conditions was significant, indicating support for Hypothesis 5. Entrepreneurs experience more stressful working conditions than those in paid employment.

Further Implications of Qualitative Analyses

We supplement the meta-analytic findings with a qualitative synthesis of all relevant studies¹ retrieved through the literature search, which we coded regarding their findings, theoretical background, research design, measures and samples. This qualitative synthesis is exploratory in nature. It allows us to explore possible sources of heterogeneity (moderators) and thus provides further insight into the relatively small effect sizes identified in our meta-analysis. The focus in this qualitative synthesis here is on findings derived from longitudinal studies (i.e., the strongest research design), except for studies on mental disorders and context where few/no longitudinal studies existed. The patterns of heterogeneity identified in the longitudinal studies are similar across the remaining cross-sectional studies.

The qualitative analyses re-affirm variation with the type of well-being, and provide additional nuances across types of mental disorders. Moreover, they point to sources of heterogeneity and thereby moderators including time, the type of entrepreneur under investigation, the type of comparison group, and heterogeneity across country-level contexts.

Variation by Type of Well-being Indicator

The qualitative analyses of longitudinal studies are in line with our meta-analytic findings reported above. Entrepreneurs have better well-being than employees in *cognitively-based*

¹ Nearly 80 percent of studies are qualitatively coded to date.

well-being indicators (job and life satisfaction). For instance, all four longitudinal studies that investigated job satisfaction (i.e. work-related well-being) reported higher well-being for entrepreneurs compared to employees (Andersson, 2008; Benz & Frey, 2004; Binder & Coad, 2016; Bradley & Roberts, 2004). Although entrepreneurs may trade off satisfaction in specific domains (e.g., leisure, Binder & Coad, 2016); they consistently reported higher overall life satisfaction than employees (Andersson, 2008; Binder & Coad, 2013, 2016). Four studies examined changes in and out of entrepreneurship over time. They found that changing from salaried to self-employment is associated with an increase in job/life satisfaction. This increase was higher than for comparable employees changing jobs (Benz & Frey, 2004; Binder & Coad, 2013), and happened despite an increase in working hours and a drop in income for entrepreneurs (Andersson, 2008). Notably the increase in satisfaction grew stronger over time (3 years, Binder & Coad, 2013, 2016), suggesting that time may also act as a moderator of the entrepreneurship-wellbeing relationship.

Research on positive affective well-being was scarce and in line with our meta-analytic findings. In one study Kautonen, Kibler, and Minniti (2017) document a similar increase in quality of life – a compound construct measuring aspects of eudaimonic well-being – for older aged individuals transitioning into entrepreneurship relative to a matched sample of employees switching to a new job.

Again in line with our meta-analytic findings, the results for *psychological distress* were mixed. For instance, among longitudinal studies, two studies found higher distress for entrepreneurs (Cardon & Patel, 2015, after controlling for selection in Rietveld, van Kippersluis, & Thurik, 2015), two found no differences (Jang et al., 2015; Torske, Bjoerngaard, Hilt, Glasscock, & Krokstad, 2016), and two reported lower distress for entrepreneurs compared to employees (Binder & Coad, 2013; Bradley & Roberts, 2004).

Variation by Type of Mental Health Issues

There were heterogeneous associations of mental health issues with entrepreneurship. First, longitudinal studies using combined measures of mental disorders and *suicide* suggest better mental health for entrepreneurs (Samuelsson, Alexanderson, Ropponen, Lichtenstein, & Svedberg, 2012; Tiikkaja et al., 2013; Toivanen et al., 2016). These patterns were however less consistent across the numerous cross-sectional studies. Second, *emotion-based, affective* (e.g. *depression, mania*) and *anxiety-related disorders* appeared to be equally prevalent among entrepreneurs and employees in cross-sectional studies (Jang et al., 2015; Johnson, Freeman, & Staudenmaier, 2015; Kawakami et al., 1996; Stephan & Roesler, 2010). Third, cognitively-based mental disorders such as *Attention Deficit Hyperactivity Disorder (ADHD)* tended to be positively associated with being self-employed and entrepreneurial tendencies, in cross-sectional studies (Verheul et al., 2015, 2016). The impulsivity component of ADHD in particular may facilitate entry into entrepreneurship. Fourth, *substance abuse disorders* also tended to be more common among entrepreneurs, especially in certain occupations (lawyers, drivers) and in less developed countries and regions (Ekuklu, Deveci, Eskiocak, Berberoglu, & Saltik, 2004; Jenkins, Othieno, Onger, Kiima, et al., 2015; Leignel, Schuster, Hoertel, Poulain, & Limosin, 2014; Lin, Lee, Pan, & Hu, 2003). These disorders seemed to develop as emotion-focussed coping styles to deal with the demands of entrepreneurs' work.

Heterogeneity among Entrepreneurs

Several studies reported well-being differences for different types of entrepreneurs. We adopt a very broad definition and broadly differentiate *opportunity and necessity entrepreneurs*. We use the former as a label for voluntary chosen and more growth-oriented entrepreneurship including owning limited liability companies, employing others, and more highly-skilled entrepreneurs as opposed to sole proprietors, sole self-employed and lower-

skilled self-employed. Opportunity entrepreneurs experienced higher well-being than necessity entrepreneurs and employees; whereby necessity entrepreneurs often experienced similar well-being to employees (Johansson Sevä, Larsson, & Strandh, 2016; Johansson Sevä, Vinberg, Nordenmark, & Strandh, 2016; Rietveld, Bailey, Hessels, & van der Zwan, 2016; Toivanen, Mellner, & Vinberg, 2015; Zbierowski, 2014). For example, in longitudinal studies, entrepreneurs owning limited liability companies had lower suicide rates than salaried employees and sole proprietors (Toivanen et al., 2016); and those who transferred from unemployment into self-employment did not experience the same uplift in well-being than those moving from salaried into self-employment (Binder & Coad, 2013, 2016). Results of cross-sectional studies were consistent with this pattern.

Type of Comparison Group

Several studies indicated the importance of the type of employee that entrepreneurs are compared to, especially their *job level*. Entrepreneurs often had higher well-being compared to blue collar and low-level white collar workers, but similar well-being compared to upper-level white collar workers (e.g. managers, Samuelsson et al., 2012). This may be a result of the higher levels of autonomy among both managers and entrepreneurs. An extension of this discussion is the role of *industry sector*. Certain industry sectors have higher rates of entrepreneurship and are associated with specific mental health risk factors. For example, the dynamic high-tech start-up scene may be more attractive for ADHD entrepreneurs, while it could also lead to more severe substance abuse disorders among the average entrepreneur. Since entrepreneurs are a very small group that is unevenly distributed across sectors, such differences are difficult to account for by including control variables. Matching approaches are preferable, although they were only used in a handful of studies (Binder & Coad, 2013, 2016; Cardon & Patel, 2015; Kautonen et al., 2017; Stephan &

Roesler, 2010). The heterogeneity among both entrepreneurs and employees suggests that managerial level employees are a more natural comparison group for broadly opportunity entrepreneurs (Schjoedt, 2009), and manual workers for self-employed farmers or catering self-employed (Torske et al., 2016).

Heterogeneity across Contexts

The vast majority of studies hailed from developed economies (83 percent). Studies from developing economies suggest that self-employment especially in the informal economy is associated with lower well-being compared to salaried employment (e.g., Hinks & Gruen, 2007 for South Africa; Jenkins, Othieno, Onger, Sifuna, et al., 2015 for rural Kenya; Lopez-Ruiz, Artazcoz, Miguel Martinez, Rojas, & Benavides, 2015 for Central America, although Rietveld et al., 2016 for an exception). Consequently, freedom from corruption, labour market regulations, and cultural values may affect the direction and strength of the entrepreneurship-wellbeing relationship.

Summary of Qualitative Findings

Especially evidence from longitudinal studies suggests that (1) entrepreneurs tend to experience higher well-being than employees, particularly (2) if well-being is measured through cognitively-based indicators (job and life satisfaction) rather than as affective psychological distress. (3) There is also heterogeneity across mental disorders. Some disorders seem to reflect stress-strain processes and others appear to facilitate entry into entrepreneurship (as proposed in our H4), while still others may reflect coping with entrepreneurial stress. (4) The well-being benefits of entrepreneurship appear to accrue primarily to what may be broadly seen as ‘opportunity’ entrepreneurs, and (5) are most pronounced when entrepreneurs are compared to blue-collar and lower-level white collar

employees (6) in developed economies. (7) The positive effects of entrepreneurship on well-being appear to grow stronger over time.

Further Planned Meta-analytic Analyses (any feedback is very welcome)

Context. We envision to complement the current qualitative analyses with further meta-analytic results whereby we include informal (i.e., culture) and formal institutions as moderators on the country level.

With regard to culture, we hypothesize that societal appreciation for entrepreneurs will positively moderate the entrepreneurship well-being relationship, while uncertainty avoidance will negatively moderate it. Extant research on employees finds that appreciation and recognition for effort expended is a key well-being resource (Siegrist, 1996). Entrepreneurs put substantial effort into creating businesses, for instance, they work longer hours than any other occupational group; and recognition by others and enhanced societal standing is one of the rewards that many entrepreneurs mention as a motivation to set up their business. Thus, entrepreneurs' well-being may be boosted when they live in societies that view entrepreneurship positively, e.g., recognize entrepreneurship as a desirable career and view entrepreneurs as positive role models; as opposed to societies that view paid employment as more desirable and regard entrepreneurship as something that is pursued out of necessity (Kwon & Sohn, 2017).

Cultures that are characterized by high levels of uncertainty avoidance consist of people that seek consistency, structure, formal procedures in their daily lives, alleviating unpredictability of future events (House, Hanges, Javidan, Dorfman, & Gupta, 2004). Entrepreneurship, however, is an uncertain endeavour, with uncertainty affecting wellbeing (Rauch et al., 2018). Given the potential over-estimation of entrepreneurial uncertainty in such cultural context and thereby the clash of cultural values with work characteristics, we

expect that in such cultures entrepreneurship will be less positively associated with well-being.

We envision to explore the role of formal institutions. Guided by institutional economics and the hierarchy of institutions (Estrin, Mickiewicz, & Stephan, 2013; Williamson, 2000), we focus on the level of business regulation (ease of doing business, labour market regulations) and the strength of rule of law (strong constitutional-level institutions that enforce property rights protection and independent judiciary). We expect that greater regulation through creating daily hassles for entrepreneurs negatively moderates the entrepreneurship-well-being relationship, while country contexts with a stronger rule of law provide more predictability and thus positively moderate the entrepreneurship-well-being relationship.

Further moderators. We are coding the type of comparison group and type of entrepreneur to substantiate the qualitative findings with meta-analytic results. With regard to the *type of entrepreneur*, based on past research (e.g., Stephan, 2018), we expect stronger well-being benefits for opportunity entrepreneurs. Yet, it is unclear whether and how necessity entrepreneurs may differ from those in paid employment. Moreover, it would be interesting to explore the role of gender and age in the entrepreneurship-wellbeing relation. Prior research has shown that mental health issues such as depression and anxiety are more common among females than males – yet, for the idiosyncratic entrepreneurship context emphasizing risk-taking and proactivity, the relationship with wellbeing may be stronger for female entrepreneurs. With regard to the *comparison group* we expected that the effect sizes will be more pronounced for matched as opposed to non-matched samples. Matching accounts for the fact that entrepreneurs differ systematically from the population in terms of sociodemographic characteristics (e.g., women are significantly less likely to be entrepreneurs).

In addition, entrepreneurship is not equally distributed across industry sectors. Matching thus enables a more systematic comparison that holds key confounds constant.

Discussion

Do entrepreneurs experience greater well-being than employees? To answer this question we conducted a meta-analysis and aggregated evidence across 78 independent samples from 42 studies spanning more than four decades of research on the entrepreneurship-wellbeing relationship. We find that entrepreneurs are more satisfied and happier than employees and the general population; and while they do experience more stressors in their work, they feel no more or less distressed. Specifically, we identified small and robust positive relationships of entrepreneurship with satisfaction and affective well-being, and no relationships with psychological distress and mental health issues - despite a positive relationship between entrepreneurship and stressful working conditions.

Our findings contribute to research on entrepreneurship and well-being in several ways. They help clarify conflicting empirical findings on the entrepreneurship-wellbeing relationship by providing a meta-analytic synthesis of a highly fragmented area of research that is scattered across disciplines. Our study highlights the value of a component-view of well-being to enhance understanding and accuracy of predictions about entrepreneurship and well-being. Especially, our qualitative findings call for greater consideration of heterogeneity in entrepreneurship research on well-being, as well as to consider the temporality of effects. Collectively, our study points to intriguing suggestions for future research on entrepreneurship and well-being.

A Component-View of Entrepreneurs' Well-Being

With this study we introduce a component view of well-being to research on entrepreneurship and well-being. The differential relationship of entrepreneurship with *well-being* (satisfaction, affective well-being) and *ill-being* (psychological distress, mental health), both in our meta-analytic and qualitative synthesis of past research, highlights the importance of adopting such a component view. These differential relationships are likely behind the conflicting findings in past research, as this research uses components of well-being interchangeably. More importantly, the component view of well-being opens up new avenues to develop our understanding and theory of entrepreneurship and well-being. It aids making more accurate predictions about antecedents and outcomes of entrepreneurs' well-being by challenging researchers to specify relationships for well-being components – affective and cognitive as well as well-being and ill-being.

Examples of distinct relationships comes from other fields, which suggest, for example, that psychological distress may be more responsive to short-term situational stressors and satisfaction to monetary and status influences. For instance, researchers found that personality is less predictive of psychological distress compared to satisfaction and affective well-being (DeNeve & Cooper, 1998). Satisfaction as the cognitive component of well-being appears to be especially sensitive to influences of high income and socio-economic status, much more so than affective components of well-being (Kahneman & Deaton, 2010).

Specifically with regard to cognitive components of well-being, the somewhat stronger relationship of entrepreneurship with satisfaction compared to affective well-being in our study is consistent with our proposed dissonance view, i.e. whereby satisfaction is boosted to justify the intense effort that entrepreneurs invest into building and running their businesses. Furthermore, adaptation effects suggest that more successful entrepreneurs may be less able to enjoy the little day-to-day successes (Quoidbach, Dunn, Petrides, &

Mikolajczak, 2010), which may explain why there is less difference in psychological distress between entrepreneurs and employees. Thus, entrepreneurship may, counterintuitively, enhance satisfaction but does not decrease psychological distress, with entrepreneurs apparently differentiating between cognitive and affective components of well-being. This, however, leads to the question of what type of well-being is more important for success in entrepreneurship. We hope future research can elaborate and test the micro-foundations of such relationships.

The Distinct Nature of Entrepreneurs' Stress?

Our findings highlight that entrepreneurs can simultaneously experience stressful working conditions and positive well-being; whilst not experiencing the negative effects on psychological distress and possibly mental health issues that are typically associated with stressful working conditions. These findings are surprising in light of well-established stressor-strain frameworks in extant research on employees (e.g., Alarcon, 2011; Beehr, 2014; Ganster & Rosen, 2013; Kivimäki et al., 2015; Koeske & Koeske, 1993), which document consistent effects of workplace stressor on psychological distress. Yet at the same time, our findings are consistent with the view that entrepreneurs and their work are 'different' and require frameworks that go beyond those developed for employees (see Stephan, 2018). Specifically, aspects of entrepreneurs' personality and important resources in their work (especially autonomy) may buffer strains and enable the experience of well-being (see Baron et al., 2016; Stephan & Roesler, 2010). Our findings are also consistent with a more nuanced perspective on stress that considers the possible upsides of certain stressors (so-called challenge stressors) that may be abundant in entrepreneurs' work (Stephan, 2018),

and which in combination with entrepreneurs' personality and autonomy may lead to higher well-being.

Thus, our findings call for a nuanced understanding of entrepreneurial stress (Rauch et al., 2018). This is particularly so as research on entrepreneurship and well-being appears to be subject to a certain 'positivity bias', i.e. a far greater number of studies in our meta-analyses investigated positive well-being (especially satisfaction) compared to psychological distress and mental health issues. This contrasts with research on employees, which seems biased towards psychological distress (Beehr, 2014; Ganster & Rosen, 2013; Parker, 2014).

Heterogeneity in the Entrepreneurship-Well-being Relationship

Our meta-analytic study was limited in terms of adopting a contingency approach due to the low number of studies providing information on moderators. Yet our qualitative analyses point to important sources of heterogeneity and also temporal dynamics, and thus offer inspiration for future research.

While some of these source of heterogeneity appear intuitive (e.g., type of entrepreneur, matched comparisons groups, developed vs. emerging economies), they pose a challenge to entrepreneurship researchers with regard to identifying the boundary conditions of the entrepreneurship-wellbeing relationship. Is it possible for entrepreneurship to confer stronger well-being benefits to underdog entrepreneurs (Miller & Le Breton-Miller, 2017) such as necessity entrepreneurs in emerging economies or those with low socio-economic status in developed economies? And if so, how? And may we be able to leverage interventions to enhance the well-being of these underdogs?

The heterogeneous relationship between entrepreneurship and mental health issues implies that we need to revise our current understanding viewing mental disorders primarily

as a long-term strain reaction to the ‘stresses’ of entrepreneurship. Our findings suggest two additional links between entrepreneurship and mental disorders. First, we find evidence for the emergent view (Wiklund et al., 2018) that especially cognitively-based disorders such as ADHD may facilitate entry into entrepreneurship and certain entrepreneurial processes. Whether other disorders that entail cognitive symptoms and disinhibitions such as bipolar disorder or schizophrenia may enable certain entrepreneurial actions is still unclear. Second, we find that especially substance-abuse disorders may constitute a form of coping mechanism to deal with the stressors of entrepreneurship. They constitute a form of emotion-focussed instead of problem-focussed coping. While coping research in general suggests that problem-focussed coping is more adaptive and functional, studies on entrepreneurs have identified benefits of emotion-focused coping (Patzelt & Shepherd, 2011; Uy, Foo, & Song, 2013). Instead of substance-abuse, however, training programs may aid entrepreneurs to develop alternative coping strategies.

Research used for our meta-analysis was predominantly cross-sectional, yet our qualitative review of longitudinal studies points to important dynamics and developments over time. The effects of entrepreneurship on well-being appear to grow stronger over time and past the immediate start-up. Yet studies were limited to 3 year time frames and focused on satisfaction. It may be that entrepreneurs have to increasingly self-justify the effort they have invested into starting the company or the positive effects of autonomy may only take hold after the initial start-up phase in which the need to make all possible decisions could also be overwhelming. Future research is needed to disentangle such effects and may leverage conceptualization of time (Sonnentag, 2012) and research on stressor-effects over time (Dormann & Griffin, 2015; Ford et al., 2014) from occupational health research.

Future Research and Limitations

The main constraints of our research to date are the limited number of studies available for including moderators in our meta-analysis as well as that there are predominantly cross-sectional studies underpinning the meta-analysis. We have sought to counterbalance these limitations by supplementing the quantitative findings with qualitative analyses.

We furthermore face limits on testing the theoretical mechanisms at play as we are reviewing past research. For instance, future research on satisfaction could incorporate measures of perceived effort-invested and self-justification to test whether dissonance helps explain the high satisfaction levels of entrepreneurs as we suggested. Moreover, it is unclear whether over longer time spans the cognitive resources involved in re-interpreting one's situation may come at the cost of performance and perhaps even mental and physical health issues as Conservation of Resources theory (Hobfoll, 2001) would suggest.

Other potential biases are linked to the limitations of the primary studies. For example, none of the studies included information on previously failed entrepreneurs. This is, in principle, an important methodological issue because both entrepreneurship and well-being may be determined by success. It would reduce variance in well-being and thus lower correlations .

References

- Alarcon, G. M. (2011). A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior*, 79(2), 549–562. <http://doi.org/10.1016/J.JVB.2011.03.007>
- Andersson, P. (2008). Happiness and health: Well-being among the self-employed. *The Journal of Socio-Economics*, 37(1), 213–236. <http://doi.org/10.1016/j.socec.2007.03.003>
- Baron, R. A., Franklin, R. J., & Hmieleski, K. M. (2016). Why Entrepreneurs Often Experience Low, Not High, Levels of Stress: The Joint Effects of Selection and Psychological Capital. *Journal of Management*, 42(3), 742–768. <http://doi.org/10.1177/0149206313495411>
- Baron, R. A., Tang, J., & Hmieleski, K. M. (2011). The downside of being ‘up’: entrepreneurs’ dispositional positive affect and firm performance. *Strategic Entrepreneurship Journal*, 5(2), 101–119.
- Beehr, T. A. (2014). *Psychological stress in the workplace*. Hove: Routledge.
- Benz, M., & Frey, B. S. (2004). Being independent raises happiness at work. *Swedish Economic Policy Review*, 11, 95–134.
- Benz, M., & Frey, B. S. (2008a). The value of doing what you like: Evidence from the self-employed in 23 countries. *Journal of Economic Behavior & Organization*, 68(3–4), 445–455. <http://doi.org/10.1016/j.jebo.2006.10.014>
- Benz, M., & Frey, B. S. (2008b). The value of doing what you like: Evidence from the self-employed in 23 countries. *Journal of Economic Behavior & Organization*, 68(3), 445–455. <http://doi.org/10.1016/j.jebo.2006.10.014>
- Binder, M., & Coad, A. (2013). Life satisfaction and self-employment: a matching approach. *Small Business Economics*, 40(4), 1009–1033. <http://doi.org/10.1007/s11187-011-9413-9>
- Binder, M., & Coad, A. (2016). How Satisfied are the Self-Employed? A Life Domain View. *Journal of Happiness Studies*, 17(4), 1409–1433. <http://doi.org/10.1007/s10902-015-9650-8>
- Blanchflower, D. G., & Oswald, A. J. (1998). What makes an entrepreneur? *Journal of Labor Economics*, 16(1), 26–60.
- Blanchflower, D. G., & Oswald, A. J. (2011). International happiness: A new view on the measure of performance. *Academy of Management Perspectives*, 25(1), 6–22.
- Bowling, N. a, Eschleman, K. J., & Wang, Q. (2010). A meta-analytic examination of the relationship between job satisfaction and subjective well-being. *Journal of Occupational and Organizational Psychology*, 83(4), 915–934. <http://doi.org/10.1348/096317909X478557>
- Bradley, D. E., & Roberts, J. A. (2004). Self-Employment and Job Satisfaction: Investigating the Role of Self-Efficacy, Depression, and Seniority. *Journal of Small Business Management*, 42(1), 37–58.
- Brechon, F., Czernichow, P., Leroy, M., & Blum-Boisgard, C. (2005). Chronic Diseases in Self-Employed French Workers. *Journal of Occupational and Environmental Medicine*,

- 47(9), 909–915. <http://doi.org/10.1097/01.jom.0000169566.45853.79>
- Busseri, M. A. (2018). Examining the structure of subjective well-being through meta-analysis of the associations among positive affect, negative affect, and life satisfaction. *Personality and Individual Differences, 122*, 68–71. <http://doi.org/10.1016/J.PAID.2017.10.003>
- Buttner, E. H. (1992). Entrepreneurial stress: Is it hazardous to your health? *Journal of Managerial Issues, 4*(2), 223–240.
- Cardon, M. S., & Patel, P. C. (2015). Is Stress Worth it? Stress-Related Health and Wealth Trade-Offs for Entrepreneurs. *Applied Psychology, 64*(2), 379–420. <http://doi.org/10.1111/apps.12021>
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: a meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*(2), 197–229. <http://doi.org/10.1037/0033-2909.124.2.197>
- Diener, E., Lucas, R. E., & Oishi, S. (2018). Advances and open questions in the science of subjective well-being. *Collabra: Psychology, 4*(1). <http://doi.org/10.1525/collabra.115>
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*(2), 276–302. <http://doi.org/10.1037/0033-2909.125.2.276>
- Dormann, C., & Griffin, M. A. (2015). Optimal time lags in panel studies. *Psychological Methods, 20*(4), 489–505. <http://doi.org/10.1037/met0000041>
- Ekuklu, G., Deveci, S., Eskiocak, M., Berberoglu, U., & Saltik, A. (2004). Alcoholism prevalence and some related factors in Edirne, Turkey. *Yonsei Medical Journal, 45*(2), 207–214.
- Elliot, A. J., & Devine, P. G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. *Journal of Personality and Social Psychology, 67*(3), 382.
- Estrin, S., Mickiewicz, T., & Stephan, U. (2013). Entrepreneurship, Social Capital, and Institutions: Social and Commercial Entrepreneurship Across Nations. *Entrepreneurship Theory and Practice, 37*(3), 479–504. <http://doi.org/10.1111/etap.12019>
- Festinger, L. (1964). *Conflict, decision, and dissonance. Conflict decision and dissonance*. Stanford: Stanford University Press. <http://doi.org/10.2307/3318996>
- Fisher, R., Maritz, A., & Lobo, A. (2013). Obsession in Entrepreneurs - Towards a Conceptualisation. *Entrepreneurship Research Journal, 3*(2), 207–237. <http://doi.org/10.1515/erj-2012-0009>
- Foo, M.-D., Uy, M. A., & Baron, R. A. (2009). How do feelings influence effort? An empirical study of entrepreneurs' affect and venture effort. *Journal of Applied Psychology, 94*(4), 1086–1094. <http://doi.org/10.1037/a0015599>
- Ford, M. T., Matthews, R. A., Wooldridge, J. D., Mishra, V., Kakar, U. M., & Strahan, S. R. (2014). How do occupational stressor-strain effects vary with time? A review and meta-analysis of the relevance of time lags in longitudinal studies. *Work & Stress, 28*(1), 9–30. <http://doi.org/10.1080/02678373.2013.877096>

- Ganster, D. C., & Rosen, C. C. (2013). *Work Stress and Employee Health: A Multidisciplinary Review*. *Journal of Management* (Vol. 39). <http://doi.org/10.1177/0149206313475815>
- Gorgievski, M. J., & Stephan, U. (2016). Advancing the Psychology of Entrepreneurship: A Review of the Psychological Literature and an Introduction. *Applied Psychology*, 65(3), 437–468. <http://doi.org/10.1111/apps.12073>
- Harmon-Jones, E., & Harmon-Jones, C. (2007). Cognitive dissonance theory after 50 years of development. *Zeitschrift Für Sozialpsychologie*, 38(1), 7–16.
- Hatak, I., & Snellman, K. (2017). The influence of anticipated regret on business start-up behaviour. *International Small Business Journal*, 35(3), 349–360. <http://doi.org/10.1177/0266242616673421>
- Hébert, R. F., & Link, A. N. (1982). *The entrepreneurs: Mainstream views and radical critiques*. New York: Praeger.
- Hinks, T., & Gruen, C. (2007). What is the Structure of South African Happiness Equations? Evidence from Quality of Life Surveys. *Social Indicators Research*, 82(2), 311–336. <http://doi.org/10.1007/s11205-006-9036-8>
- Hinojosa, A. S., Gardner, W. L., Walker, H. J., Coglisier, C., & Gullifor, D. (2016). A Review of Cognitive Dissonance Theory in Management Research: Opportunities for Further Development. *Journal of Management*, 43(1), 170–199. <http://doi.org/10.1177/0149206316668236>
- Hmieleski, K. M., & Corbett, A. C. (2008). The contrasting interaction effects of improvisational behavior with entrepreneurial self-efficacy on new venture performance and entrepreneur work satisfaction. *Journal of Business Venturing*, 23(4), 482–496. <http://doi.org/10.1016/j.jbusvent.2007.04.002>
- Hobfoll, S. E. (2001). The Influence of Culture, Community, and the Nested-Self in the Stress Process: Advancing Conservation of Resources Theory. *Applied Psychology*, 50(3), 337–421. <http://doi.org/10.1111/1464-0597.00062>
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P., & Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Thousand Oaks, CA: Sage.
- Jamal, M. (1997). Job stress, satisfaction, and mental health: An empirical examination of self-employed and non-self-employed Canadians. *Journal of Small Business Management*, 35(4), 48–57.
- Jang, S.-Y., Jang, S.-I., Bae, H.-C., Shin, J., & Park, E.-C. (2015). Precarious employment and new-onset severe depressive symptoms: a population-based prospective study in South Korea. *Scandinavian Journal of Work, Environment & Health*, 41(4), 329–337. <http://doi.org/10.5271/sjweh.3498>
- Jenkins, R., Othieno, C., Omollo, R., Ongeru, L., Sifuna, P., Mboroki, J., ... Ogotu, B. (2015). Probable Post Traumatic Stress Disorder in Kenya and Its Associated Risk Factors: A Cross-Sectional Household Survey. *International Journal of Environmental Research and Public Health*, 12(10), 13494–13509. <http://doi.org/10.3390/ijerph121013494>
- Jenkins, R., Othieno, C., Ongeru, L., Kiima, D., Sifuna, P., Kingora, J., ... Ogotu, B. (2015). Alcohol consumption and hazardous drinking in western Kenya—a household survey in

- a health and demographic surveillance site. *BMC Psychiatry*, 15(1), 230.
<http://doi.org/10.1186/s12888-015-0603-x>
- Jenkins, R., Othieno, C., Ogeri, L., Sifuna, P., Ongecha, M., Kingora, J., ... Ogotu, B. (2015). Common mental disorder in Nyanza province, Kenya in 2013 and its associated risk factors –an assessment of change since 2004, using a repeat household survey in a demographic surveillance site. *BMC Psychiatry*, 15(1), 309.
<http://doi.org/10.1186/s12888-015-0693-5>
- Johansson Sevä, I., Larsson, D., & Strandh, M. (2016). The prevalence, characteristics and well-being of ‘necessity’ self-employed and ‘latent’ entrepreneurs: findings from Sweden. *International Journal of Entrepreneurship and Small Business*, 28(1), 58–77.
- Johansson Sevä, I., Vinberg, S., Nordenmark, M., & Strandh, M. (2016). Subjective well-being among the self-employed in Europe: macroeconomy, gender and immigrant status. *Small Business Economics*, 46(2), 239–253. <http://doi.org/10.1007/s11187-015-9682-9>
- Johnson, S. L., Freeman, M. A., & Staudenmaier, P. J. (2015). Manic tendencies are not related to being an entrepreneur, intending to become an entrepreneur, or succeeding as an entrepreneur. *Journal of Affective Disorders*, 173, 154–158.
<http://doi.org/10.1016/j.jad.2014.10.049>
- Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). Organizational Stress: Studies in Role Conflict and Ambiguity. *American Sociological Review*, 30(4), 620. <http://doi.org/10.2307/2091375>
- Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences of the United States of America*, 107(38), 16489–93. <http://doi.org/10.1073/pnas.1011492107>
- Kahneman, D., Diener, E., & Schwarz, N. (1999). *Well-being: Foundations of hedonic psychology*. New York: Russell Sage Foundation.
- Karasek, R. A., & Theorell, T. (1990). *Healthy work: stress, productivity, and the reconstruction of working life*. New York, NY: Basic Books.
- Kautonen, T., Kibler, E., & Minniti, M. (2017). Late-career entrepreneurship, income and quality of life. *Journal of Business Venturing*, 32(3), 318–333.
<http://doi.org/10.1016/j.jbusvent.2017.02.005>
- Kawakami, N., Iwata, N., Tanigawa, T., Oga, H., Araki, S., Fujihara, S., & Kitamura, T. (1996). Prevalence of Mood and Anxiety Disorders in a Working Population in Japan. *Journal of Occupational & Environmental Medicine*, 38(9), 899–905.
<http://doi.org/10.1097/00043764-199609000-00012>
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., ... Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, 32(6), 959–976.
<http://doi.org/10.1017/S0033291702006074>
- Kivimäki, M., Jokela, M., Nyberg, S. T., Singh-Manoux, A., Fransson, E. I., Alfredsson, L., ... Virtanen, M. (2015). Long working hours and risk of coronary heart disease and stroke: A systematic review and meta-analysis of published and unpublished data for 603 838 individuals. *The Lancet*. [http://doi.org/10.1016/S0140-6736\(15\)60295-1](http://doi.org/10.1016/S0140-6736(15)60295-1)
- Koeske, G. F., & Koeske, R. D. (1993). A Preliminary Test of a Stress-Strain-Outcome

- Model for Reconceptualizing the Burnout Phenomenon. *Journal of Social Service Research*, 17(3–4), 107–135. http://doi.org/10.1300/J079v17n03_06
- Kwon, I., & Sohn, K. (2017). Job dissatisfaction of the self-employed in Indonesia. *Small Business Economics*, 49(1), 233–249. <http://doi.org/10.1007/s11187-016-9820-z>
- Leignel, S., Schuster, J.-P., Hoertel, N., Poulain, X., & Limosin, F. (2014). Mental health and substance use among self-employed lawyers and pharmacists. *Occupational Medicine*, 64(3), 166–171. <http://doi.org/10.1093/occmed/kqt173>
- LePine, J. A., LePine, M. A., & Jackson, C. L. (2004). Challenge and hindrance stress: relationships with exhaustion, motivation to learn, and learning performance. *Journal of Applied Psychology*, 89(5), 883.
- LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor–hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal*, 48(5), 764–775.
- Lin, S., Lee, C., Pan, C., & Hu, W. (2003). Comparison of the prevalence of substance use and psychiatric disorders between government- and self-employed commercial drivers. *Psychiatry and Clinical Neurosciences*, 57, 425–431.
- Lindström, M., Ali, S. M., & Rosvall, M. (2012). Socioeconomic status, labour market connection, and self-rated psychological health: the role of social capital and economic stress. *Scandinavian Journal of Public Health*, 40(1), 51–60. <http://doi.org/10.1177/1403494811421825>
- Loewe, N., Araya-Castillo, L., Thieme, C., & Manuel Batista-Foguet, J. (2015). Self-employment as a moderator between work and life satisfaction. *Academia-Revista Latinoamericana De Administracion*, 28(2), 213–226. <http://doi.org/10.1108/arla-10-2014-0165>
- López-Ruiz, M., Artazcoz, L., Martínez, J. M., Rojas, M., & Benavides, F. G. (2015). Informal employment and health status in Central America. *BMC Public Health*, 15(1), 698. <http://doi.org/10.1186/s12889-015-2030-9>
- Massé, R., Poulin, C., Dassa, C., Lambert, J., Bélair, S., & Battaglini, A. (1998). The Structure of Mental Health: Higher-Order Confirmatory Factor Analyses of Psychological Distress and Well-Being Measures. *Social Indicators Research*, 45(1), 475–504. <http://doi.org/10.1023/A:1006992032387>
- McEwen, B. S. (2004). Protection and damage from acute and chronic stress: Allostasis and allostatic overload and relevance to the pathophysiology of psychiatric disorders. In *Annals of the New York Academy of Sciences* (Vol. 1032, pp. 1–7). <http://doi.org/10.1196/annals.1314.001>
- Millán, J. M., Hessels, J., Thurik, R., & Aguado, R. (2013). Determinants of job satisfaction: A European comparison of self-employed and paid employees. *Small Business Economics*, 40(3), 651–670. <http://doi.org/10.1007/s11187-011-9380-1>
- Miller, D., & Le Breton-Miller, I. (2017). Underdog Entrepreneurs: A Model of Challenge-Based Entrepreneurship. *Entrepreneurship Theory and Practice*, 41(1), 7–17. <http://doi.org/10.1111/etap.12253>
- Parker, S. K. (2014). Beyond motivation: Job and work design for development, health, ambidexterity, and more. *Annual Review of Psychology*, 65, 661–691.

- Patel, P. C., Wolfe, M. T., & Williams, T. A. (2018). Self-employment and allostatic load. *Journal of Business Venturing*. <http://doi.org/10.1016/J.JBUSVENT.2018.05.004>
- Patzelt, H., & Shepherd, D. A. (2011). Negative emotions of an entrepreneurial career: Self-employment and regulatory coping behaviors. *Journal of Business Venturing*, 26(2), 226–238. <http://doi.org/10.1016/j.jbusvent.2009.08.002>
- Peters, A., McEwen, B. S., & Friston, K. (2017). Uncertainty and stress: Why it causes diseases and how it is mastered by the brain. *Progress in Neurobiology*. <http://doi.org/10.1016/j.pneurobio.2017.05.004>
- Quoidbach, J., Dunn, E. W., Petrides, K. V., & Mikolajczak, M. (2010). Money Giveth, Money Taketh Away: The Dual Effect of Wealth on Happiness. *Psychological Science*, 21(6), 759–763. <http://doi.org/10.1177/0956797610371963>
- Rauch, A., Fink, M., & Hatak, I. (2018). STRESS PROCESSES: AN ESSENTIAL INGREDIENT IN THE ENTREPRENEURIAL PROCESS. *Academy of Management Perspectives*. <http://doi.org/10.5465/amp.2016.0184>
- Rietveld, C. A., Bailey, H., Hessels, J., & van der Zwan, P. (2016). Health and entrepreneurship in four Caribbean Basin countries. *Economics & Human Biology*, 21, 84–89. <http://doi.org/10.1016/j.ehb.2015.12.004>
- Rietveld, C. A., van Kippersluis, H., & Thurik, A. R. (2015). Self-Employment and Health: Barriers or Benefits? *Health Economics*, 24(10), 1302–1313. <http://doi.org/10.1002/hec.3087>
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52(1), 141–166.
- Ryff, C. D., Dienberg Love, G., Urry, H. L., Muller, D., Rosenkranz, M. A., Friedman, E. M., ... Singer, B. (2006). Psychological Well-Being and Ill-Being: Do They Have Distinct or Mirrored Biological Correlates? *Psychotherapy and Psychosomatics*, 75(2), 85–95.
- Samuelsson, Å., Alexanderson, K., Ropponen, A., Lichtenstein, P., & Svedberg, P. (2012). Incidence of disability pension and associations with socio-demographic factors in a Swedish twin cohort. *Social Psychiatry and Psychiatric Epidemiology*, 47(12), 1999–2009. <http://doi.org/10.1007/s00127-012-0498-5>
- Schjoedt, L. (2009). Entrepreneurial Job Characteristics: An Examination of Their Effect on Entrepreneurial Satisfaction. *Entrepreneurship Theory and Practice*, 33(3), 619–644. <http://doi.org/10.1111/j.1540-6520.2009.00319.x>
- Schmidt, F. L., & Hunter, J. E. (2014). *Methods of meta-analysis: Correcting error and bias in research findings*. Thousand Oaks, CA: Sage.
- Shepherd, D. A., Wiklund, J., & Haynie, J. M. (2009). Moving forward: Balancing the financial and emotional costs of business failure. *Journal of Business Venturing*, 24(2), 134–148. <http://doi.org/10.1016/j.jbusvent.2007.10.002>
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, 1(1), 27.
- Sonnentag, S. (2012). Time in organizational research: Catching up on a long neglected topic in order to improve theory. *Organizational Psychology Review*, 2(4), 361–368.

- Spivack, A. J., & McKelvie, A. (2018). Entrepreneurship Addiction: Shedding Light on the Manifestation of the “Dark Side” in Work Behavior Patterns. *Academy of Management Perspectives*. <http://doi.org/10.5465/amp.2016.0185>
- Stephan, U. (2018). Entrepreneurs’ Mental Health and Well-Being: A Review and Research Agenda. *The Academy of Management Perspectives*. <http://doi.org/10.5465/amp.2017.0001>
- Stephan, U., & Roesler, U. (2010). Health of entrepreneurs versus employees in a national representative sample. *Journal of Occupational and Organizational Psychology*, 83(3), 717–738. <http://doi.org/10.1348/096317909X472067>
- Tellegen, A., Watson, D., & Clark, L. A. (1999). On the Dimensional and Hierarchical Structure of Affect. *Psychological Science*, 10(4), 297–303. <http://doi.org/10.1111/1467-9280.00157>
- Thompson, C. A., Kopelman, R. E., & Schriesheim, C. A. (1992). Putting all one’s eggs in the same basket: A comparison of commitment and satisfaction among self- and organizationally employed men. *Journal of Applied Psychology*, 77(5), 738–743. <http://doi.org/10.1037/0021-9010.77.5.738>
- Tiikkaja, S., Sandin, S., Malki, N., Modin, B., Sparen, P., & Hultman, C. M. (2013). Social Class, Social Mobility and Risk of Psychiatric Disorder - A Population-Based Longitudinal Study. *PLOS One*, 8(11). <http://doi.org/10.1371/journal.pone.0077975>
- Toivanen, S., Griep, R. H., Mellner, C., Vinberg, S., & Eloranta, S. (2016). Mortality differences between self-employed and paid employees: a 5-year follow-up study of the working population in Sweden. *Occupational and Environmental Medicine*, 73(9), 627–636. <http://doi.org/10.1136/oemed-2015-103472>
- Toivanen, S., Mellner, C., & Vinberg, S. (2015). Self-employed persons in Sweden - mortality differentials by industrial sector and enterprise legal form: A five-year follow-up study. *American Journal of Industrial Medicine*, 58(1), 21–32. <http://doi.org/10.1002/ajim.22387>
- Torske, M. O., Bjoerngaard, J. H., Hilt, B., Glasscock, D., & Krokstad, S. (2016). Farmers’ mental health: A longitudinal sibling comparison – the HUNT study, Norway. *Scandinavian Journal of Work, Environment & Health*, 42(6), 547–556. <http://doi.org/10.5271/sjweh.3595>
- Totterdell, P., Wood, S., & Wall, T. (2006). An intra-individual test of the demands-control model: A weekly diary study of psychological strain in portfolio workers. *Journal of Occupational and Organizational Psychology*, 79, 63–84. <http://doi.org/10.1348/096317905x52616>
- Uy, M. A., Foo, M.-D., & Song, Z. (2013). Joint effects of prior start-up experience and coping strategies on entrepreneurs’ psychological well-being. *Journal of Business Venturing*, 28(5), 583–597. <http://doi.org/10.1016/j.jbusvent.2012.04.003>
- van Praag, C. M., & Versloot, P. H. (2007). What is the value of entrepreneurship? A review of recent research. *Small Business Economics*, 29(4), 351–382. <http://doi.org/10.1007/s11187-007-9074-x>
- Veit, C. T., & Ware, J. E. (1983). The structure of psychological distress and well-being in general populations. *Journal of Consulting and Clinical Psychology*, 51(5), 730.

- Verheul, I., Block, J., Burmeister-Lamp, K., Thurik, R., Tiemeier, H., & Turturea, R. (2015). ADHD-like behavior and entrepreneurial intentions. *Small Business Economics*, 45(1), 85–101. <http://doi.org/10.1007/s11187-015-9642-4>
- Verheul, I., Rietdijk, W., Block, J., Franken, I., Larsson, H., & Thurik, R. (2016). The association between attention-deficit/hyperactivity (ADHD) symptoms and self-employment. *European Journal of Epidemiology*, 31(8), 793–801. <http://doi.org/10.1007/s10654-016-0159-1>
- Wach, D., Stephan, U., & Gorgievski, M. (2016). More than money: Developing an integrative multi-factorial measure of entrepreneurial success. *International Small Business Journal*, 34(8), 1098–1121. <http://doi.org/10.1177/0266242615608469>
- Warr, P. (2013). How to think about and measure psychological wellbeing. In M. Wang, R. R. Sinclair, & L. E. Tetrick (Eds.), *Research methods in occupational health psychology, Measurement, design and data analysis* (pp. 76–90). New York: Routledge. <http://doi.org/10.4324/9780203095249>
- Warr, P. B. (1987). *Work, unemployment, and mental health*. Oxford science publications.
- Warr, P., Bindl, U. K., Parker, S. K., & Inceoglu, I. (2014). Four-quadrant investigation of job-related affects and behaviours. *European Journal of Work and Organizational Psychology*, 23(3), 342–363. <http://doi.org/10.1080/1359432X.2012.744449>
- Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, 98(2), 219–235. <http://doi.org/10.1037/0033-2909.98.2.219>
- Wiklund, J., Hatak, I., Patzelt, H., & Shepherd, D. A. (2018). Mental Disorders in the Entrepreneurship Context: When being different can be an advantage. *Academy of Management Perspectives*, 32(2), 182–206.
- Williamson, O. E. (2000). The new institutional economics - Taking stock, looking ahead. *Journal of Economic Literature*. <http://doi.org/10.1257/jel.38.3.595>
- Zbierowski, P. (2014). Well-being of entrepreneurs – International comparison based on GEM data. *Journal of Positive Management*, 5(4), 89–100.