

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Entrepreneurship and subjective well-being: Does the motivation to start-up a firm matter?

José Ernesto Amorós^{a,b,*}, Oscar Cristi^c, Wim Naudé^d

^a Tecnológico de Monterrey, EGADE Business School, Mexico

^b Universidad del Desarrollo, School of Business and Economics, Chile

^c Universidad San Sebastián, School of Business and Economics, Chile

^d RWTH Aachen University and IZA Institute for Labor Economics, Germany, and MSM, Maastricht and ASC University of Leiden, The Netherlands

ARTICLE INFO

Keywords:

Well-being

Necessity-driven entrepreneurship

Motivation

Global Entrepreneurship Monitor

Latin America

ABSTRACT

Although there have been many studies on the subjective well-being of entrepreneurs, these have compared entrepreneurs' well-being with those of non-entrepreneurs, or with economic and firm performance, or attempted to identify the determinants their subjective well-being. So far there have been only limited attempts to compare the subjective well-being of differently motivated entrepreneurs. This paper is an attempt to contribute filling this gap. We explore the relationship between the motivation for entering into entrepreneurship and subjective well-being. We use data from the Global Entrepreneurship Monitor in 70 countries covering 159,274 individuals. Using a two-stage probit least squares estimator to test the relationship between motivation and subjective well-being, with particular concern for the direction of causality, we find that necessity-motivated entrepreneurs report well-being levels similar to opportunity-motivated entrepreneurs. We also find that in countries where necessity entrepreneurship is more prevalent (typically developing countries), lower rates of entrepreneurial entry will be associated with higher reported subjective well-being of the necessity-motivated entrepreneurs. The upshot of our findings is that entrepreneurship, even if motivated by necessity, contributes to subjective well-being.

1. Introduction

The motivations of individuals to enter into entrepreneurship are complex and have generated a large scholarly literature (see e.g. Amit, MacCrimmon, Zietsma, & Oesch, 2001; Birley & Westhead, 1994; Carter, Gartner, Shaver, & Gatewood, 2003; Cassar, 2007; Douglas & Shepherd, 2002; Hessels, Van Gelderen, & Thurik, 2008; Krueger, Reilly, & Carsrud, 2000; Segal, Borgia, & Schoenfeld, 2005). In this literature it is common to find these motivations categorised as either being due push or pull factors, or a combination¹ (e.g. Amit & Muller, 1995). Push-factors can include an unpleasant job or unemployment, while pull-factors can include the need for achievement, autonomy and financial success. Individuals who are pushed into entrepreneurship are often labelled to be necessity-motivated and those pulled into entrepreneurship as being opportunity-motivated. According to Stephan, Hart, and

Drews (2015:11) the “opportunity-necessity differentiation, also referred to as push–pull, is the longest standing conceptualization of entrepreneurial motivation”.

The GEM survey, the largest cross-country adult survey of entrepreneurship in the world, measures the extent of necessity- and opportunity-motivated entrepreneurship since 2001. Typically, 30 percent of entrepreneurs in the GEM samples are necessity-motivated and this prevalence is more frequent in developing economies (Poschke, 2010; Amorós, Ciravegna, Mandakovic, & Stenholm, 2019).

Whether out of necessity or opportunity, a person's motivation to become an entrepreneur will affect their aspirations, which in turn will affect outcomes such as their firm's performance and their own subjective well-being (Hessels et al., 2008). Most scholarly attention so far has gone into describing the different characteristics of necessity- and opportunity-motivated entrepreneurs, and the consequences of their

* Corresponding author at: EGADE Business School, Tecnológico de Monterrey. Av. Carlos Lazo 100, 01389 Mexico City, Mexico

E-mail addresses: amoros@tec.mx (J.E. Amorós), oscar.cristi.marfil@gmail.com (O. Cristi), naude@time.rwth-aachen.de (W. Naudé).

¹ Carsrud and Brännback (2011) discuss how the distinction between push and pull factors reflects two fundamental theories towards human motivation, namely drive theories (wherein human action is motivated to avoid an unpleasant outcome or fear, such as being without an income) and incentive theories (wherein human action is motivated to achieve some goal, such as personal development or societal recognition).

<https://doi.org/10.1016/j.jbusres.2020.11.044>

Received 7 February 2018; Received in revised form 9 November 2020; Accepted 22 November 2020

0148-2963/© 2020 Elsevier Inc. All rights reserved.

motivation for firm profits and macro-economic growth (e.g. Block and Wagner, 2010; Birley & Westhead, 1994; Wong, Ho, & Autio, 2005). What has been neglected is the consequences of motivation for the subjective well-being of entrepreneurs (Wiklund, Nikolaev, Shir, Foo, & Bradley, 2019). Although there have been many studies dealing with the subjective well-being of entrepreneurs, these have compared entrepreneurs' well-being with those of non-entrepreneurs, or with economic and firm performance, or attempted to identify the determinants their subjective well-being (see e.g. Benz & Frey, 2008; Lange, 2012; Naude, Amorós, & Cristi, 2014). So far there have been only limited attempts to compare the subjective well-being of differently motivated entrepreneurs - one of the few paper being that of see Shir, Nikolaev, and Wincent (2019). This paper is an attempt to contribute filling this gap.

It is suspected that necessity-motivated entrepreneurs will report less subjective well-being compared to those motivated by opportunity. One reason is that necessity-motivated entrepreneurship tends to be predominantly (but not exclusively) found in poorer, developing countries, where supporting conditions for entrepreneurship tend to be weak and missing markets and market failures more widespread. In such circumstances entrepreneurship may be tougher, but an unavoidable career choice which people just have to bear with for the sake of survival (Hall, Matos, Sheehan, & Silvestre, 2012; Shane, 2009; Reynolds et al., 2005). However, due to the lack of extant research on the topic, one should not assume with any certainty that necessity-motivated entrepreneurs report less subjective well-being than those motivated by opportunity.

In this paper we address this gap in the literature and ask whether it matters for the subjective well-being of entrepreneurs whether they have started their firm out of necessity or to pursue an opportunity. A two-stage probit least squares procedure is used to test the relationship between motivation and subjective well-being, with particular concern for the direction of causality between motivation and well-being. We draw on population-representative survey data from 70 countries, covering 159,274 individuals, collected for the 2013 Global Entrepreneurship Monitor (GEM).

This paper is, to the best of our knowledge, the first that attempts to study this relationship at the individual level across such a large number of countries. Previous papers studying the relationship between necessity and opportunity motivations and entrepreneurial subjective well-being have tended to be concerned with single countries and have used relatively small sample sizes (e.g. Van der Zwan, Thurik, Verheul, & Hessels, 2016).

Our results are first, that necessity-motivated entrepreneurs report subjective well-being similar to those of opportunity-motivated entrepreneurs. Second, we find that in countries where necessity entrepreneurship is more prevalent (typically developing countries), lower rates of entrepreneurial entry will be associated with higher reported subjective well-being of the necessity-motivated entrepreneurs. We exemplify the case of developing countries by focusing on a sub-sample of Latin American countries. This shows that there are negative wellbeing-spillovers from having more entrepreneurs being necessity-motivated; However, with this sub-sample of developing countries of Latin America, being involved in entrepreneurship activities also have positive and significant effect on subjective-wellbeing. An upshot of our findings is that entrepreneurship, even if motivated by necessity, contributes to subjective well-being. This finding contributes to a growing number of studies casting doubt on the validity or usefulness of the distinction between necessity and opportunity motivation and its operationalization in the GEM survey.

The rest of the paper is structured as follows. In Section 2 we discuss the relevant literature and explain the salient concepts. Then, in Section 3 we explain our methodology. The empirical findings are set out and discussed in Section 4. Section 5 concludes.

2. Relevant literature

Interest in the subjective well-being of individuals, including of those

that choose entrepreneurship (or self-employment) as an occupation has risen in recent years (Wach, Stephan, Weinberger, & Wegge, 2020). Subjective well-being refers to the degree to which people are satisfied with their lives and their jobs (Naudé et al., 2014). What the research on subjective well-being of entrepreneurs have established is that entrepreneurs tend to experience higher levels of subjective well-being compared to those who are wage employed and unemployed (e.g. Benz & Frey, 2008; Lange, 2012; Naudé et al., 2014). They have also been found to be healthier than non-entrepreneurs (e.g. Rietveld, van Kippersluis, & Thurik, 2015; Patzelt & Shepherd, 2011). Even many entrepreneurs self-select into potential stressful careers, they can enjoy this type of challenges (Baron, Franklin, & Hmieleski, 2016). Additionally, some stressors can enhance entrepreneurs' well-being over time (Wach et al., 2020). Other consideration are related with the fact that entrepreneurs tend, on average, to earn less than wage employees (Hamilton, 2000). But the explanations for this higher level of subjective well-being have ascribed with non-pecuniary advantages of entrepreneurship, such as autonomy, lifestyle choice and flexibility and personal development (Stephan, 2018).

The concept of subjective well-being involves aspects in living in a good state and positive ways, encompassing both affective states and cognitive assessments of global life judgments and domain satisfaction (Diener, 1984, Warr, 2017). Following previous studies (e.g. Fredrickson, 2001; Keyes, 2013; Wach et al., 2020) we put special emphasis on positive well-being as human flourishing function. We follow Naudé et al (2014) in using life satisfaction as a measure of subjective well-being (see Pavot & Diener, 2008). It is measured and defined (see also Section 3.3 below for more detail) based on the following questions: "All things considered, how satisfied are you with your life as a whole these days?" and "Now taking everything about your life into account, how satisfied or dissatisfied are you with your life today?" This approach to measure subjective well-being has been standardized and has been confirmed to be appropriate to compare subjective well-being across countries (see e.g. Bolle, Okhrin, & Vogel, 2009; Bolle & Kemp, 2008).

Although there has thus been much work done on the subjective well-being of entrepreneurs and the self-employed, this has mostly been to compare entrepreneurs' well-being with that of people in wage employment or in unemployment, and not to compare differently motivated entrepreneurs with one another. Specifically, Wiklund et al. (2019) define entrepreneurial well-being as "the experience of satisfaction, positive affect, infrequent negative affect, and psychological functioning in relation to developing, starting, growing, and running an entrepreneurial venture."

2.1. Subjective well-being and entrepreneurship motivation

Following the previous definition, the motivation for entrepreneurship, whether necessity or opportunity motivated, may have consequences for important concerns in the literature and in practice, such as the aspirations of the entrepreneur, which in turn determines firm performance and the well-being of the individual entrepreneur (Hessels et al., 2008; Stephan, 2018). Most scholarly attention so far has gone into describing the different characteristics of necessity and opportunity motivated entrepreneurs, the consequences of motivation for firm profits, and the impacts of entrepreneurship on macro-economic growth (e.g. Block and Wagner, 2010; Birley & Westhead, 1994; Wong et al., 2005). There is thus a paucity of literature on the motivation and subjective well-being of entrepreneurs.

As far as the relationship between entrepreneurial motivation and firm performance is concerned, it may *a priori* be expected that motivation will matter significantly. For example, if the entrepreneur's underlying motivation is to achieve financial success, then she or he may be more interested in realizing profits as opposed to if her motivation is to enjoy independence and flexibility in working conditions (Stephan et al., 2015; Hessels et al., 2008; Calderon, Icafone, & Juarez, 2016).

Note that both of these underlying motivations in this example are of

pull (or opportunity motivations), suggesting that there may not be a simple and unambiguous relationship between opportunity and necessity motivations and firm performance.

Most scholars have however tended to equate or assume *a priori* that the firms of opportunity-motivated entrepreneurs will be more profitable, larger, and survive longer. One reason for this *a priori* assumption is that the traits that have been identified of entrepreneurs pursuing an opportunity include traits such as risk-taking, tolerance for ambiguity, internal locus of control, self-efficacy and goal setting (Shane, Locke, & Collins, 2003; Bradley and Roberts, 2004).

Necessity entrepreneurs could have resource constraints, when this condition is associated with job loss, or lack of satisfactory work options (Ryff, 2019). Theoretically, the possibility that necessity-motivated entrepreneurs will experience less subjective well-being has been laid out by Gries and Naudé (2011) who formalized Amartya Sen's Capability Approach for the case of entrepreneurship, showing that if an entrepreneur does not have agency in the decision to enter into entrepreneurship that it ceases to be a human functioning. Whether or not necessity motivated entrepreneurship is a human functioning or not, need to be established empirically. As noted by Ryff (2019: 653) –"starting conditions may imply different well-being consequences relative to those whose pursuits of new business ventures were not activated by economic downturns, job loss or limited work opportunities".-

Regarding the relationship between motivation and the subjective well-being of entrepreneurs, the relatively limited existing studies tend to concur, so far, that entrepreneurs who have been motivated by necessity report less subjective well-being than entrepreneurs motivated by opportunity. Some studies in this respect are by Block and Koellinger (2009), Kautonen and Palmroos (2009), Nikolova (2019) among others.

Block and Koellinger (2009: 193) using a sample of 2304 individuals in Germany who subscribed to a newsletter targeting early-stage entrepreneurs found that necessity-motivated entrepreneurs are "significantly less satisfied" even when they control for financial success. They explain this by reference to the lack of procedural utility that an individual obtains from entrepreneurship if they for instance do not have the aspirations to be entrepreneurial and lacks the agency or context to obtain wage employment.

Kautonen and Palmroos (2009), using a sample of 777 Finnish micro-enterprises likewise found that entrepreneurs who founded a start-up out of necessity were less satisfied than those who did so to exploit an opportunity. They ascribed this finding to the likelihood that someone who is an entrepreneur out of necessity may not feel that he or she has the ability to be a successful entrepreneur. However, and interestingly, they found that this effect was relatively small, with only 3.4 percent of entrepreneurial satisfaction as measured in their survey, explained by entrepreneurial motivation.

Recent studies that, although not focused directly on subjective well-being of entrepreneurs, but on the close related topic of the health status of entrepreneurs, found that the health-status of necessity-motivated entrepreneurship tend to be lower than that of opportunity-motivated entrepreneurs (Van der Zwan et al., 2016), even necessity-motivated entrepreneurship also experience improvements in their mental but not physical health (Nikolova, 2019)

The above-mentioned studies have mostly, as also indicated by Van der Zwan et al. (2016) been largely focused on single countries, and relatively small samples as the discussion above noted. This confirms that there is a gap in the literature on entrepreneurial motivation and subjective well-being using large scale and cross-country studies.

3. Methodology

3.1. Hypothesis

From the survey of the relevant literature in the previous subsection we hypothesize that necessity-motivated entrepreneurs will experience

less subjective well-being than opportunity-motivated entrepreneurs. This hypothesis is specifically based on the preliminary empirical findings of previous studies by Block and Koellinger (2009) and Kautonen and Palmroos (2009) as well as on the intuition that individuals who may not have wanted to be in entrepreneurship as a first occupational choice, may experience less subjective well-being, due feeling inadequate for the task, not aspiring to be a successful entrepreneur, and moreover face an uphill battle due to the contextual factors that had reduced his or her labor market options in the first place. As a corollary to this we also hypothesize that if subjective well-being increases in a context of where poverty is more widespread, then it could be associated with a decline in the rate of necessity entrepreneurship. This is because there may be negative wellbeing-spillovers caused by larger numbers of necessity entrepreneurs in a country.

3.2. Estimation methodology

We model individual well-being (WB) as a function of individual entrepreneurial decision as:

$$WB_i = j_0 + j_1 ED_i + j' Z_i + e_i \quad (1)$$

where ED_i represents the entrepreneurial decision, Z is a set of exogenous control variables, e is a random error and j₀, j₁, j' are unknown parameters. ED takes a value of 1 when the individual starts new business and 0 otherwise, and that decision depends on the latent variable "marginal net benefit" of being an entrepreneur (MB) such that:

$$ED = 1 \text{ if } MB > 0 \quad (2)$$

$$ED = 0 \text{ if } MB \leq 0$$

Then we propose the following model for the latent variable MB:

$$MB_i = \beta_0 + \beta_1 WB_i + \beta' X_i + u_i \quad (3)$$

where X is a set of exogeneous control variables and u is a random error with a symmetric distribution² and β_0 , β_1 , β are unknown parameters.

Thus, from (2) and (3), we have that:

$$E[ED] = \text{Prob}(ED = 1)1 + (1 - \text{Prob}(ED = 0))0 = \text{Prob}(ED = 1)$$

and,

$$\text{Prob}(ED = 1) = \text{Prob}(MB_i > 0)$$

$$= \text{Prob}(u_i > -\beta_0 - \beta_1 WB_i - \beta' X_i)$$

$= 1 - F(-\beta_0 - \beta_1 WB_i - \beta' X_i)$, where F() is a cumulative distribution function

$$= F(\beta_0 + \beta_1 WB_i + \beta' X_i) \quad (4)$$

For that last step we use the symmetry assumption about the distribution of u.

Equation (4) estates that probability of ED = 1 is a function of WB, which implies that ED is an endogenous variable in equation (1). Hence, we need the following equation system model with one equation for WB and other for ED:

$$WB_i = j_0 + j_1 ED_i + j' Z_i + e_i \quad (1)$$

$$\text{Prob}(ED = 1) = F(\beta_0 + \beta_1 WB_i + \beta' X_i) \quad (5)$$

In this system of simultaneous equations, one of the endogenous variables is continuous (WB) and the other is dichotomous (ED). In order to estimate this system, we assume that the cumulative distribution function F() corresponds to a standard normal distribution and use a two-stage probit least squares as estimation technique as it provides consistent estimates for the coefficients, as well as their corrected standard errors (Keshk, 2003). In the first stage, models for each

² The assumption that the random error u distributes symmetrically happens to be the case for the binary response models applied most often (Wooldridge (2002) chapter 15, p. 458).

endogenous variable are fitted using all of the exogenous variables (i.e., the exogenous control variables in both (1) and (5)). Model for WBI is estimated via OLS and model for P(EDi = 1) via Probit. From these reduced-form estimates, the predicted values from each endogenous variable are obtained for use in the second stage. In the second stage, the original endogenous variables WBI and EDi are replaced by their respective fitted values in the right-hand side of equations (1) and (5). Again, model for WBI is estimated via OLS and model for P(EDi = 1) via Probit. The final step in the procedure is the correction of the standard errors accordingly to Maddala (1983, 244–5). To estimate this model, we use option `cdsimeq` in STATA (Keshk, 2003).

3.3. Data and variables

3.3.1. Individual well-being

Data is taken from the Global Entrepreneurship Monitor 2013, where individuals in 70 countries responded a set of questions related to their well-being. Given the complex structure of the well-being construct (Conceição & Bandura, 2008), we adopt a wider approach using measures of subjective well-being, which relates to the ways in which people experience quality of life, and it comprises both emotional reactions and cognitive judgments (Diener, 1984; Fors & Kulin, 2016).

We measure subjective well-being by means of the Satisfaction with Life Scale (SWLS) (Pavot & Diener, 2008). This scale has five-item designed to measure global cognitive judgments of satisfaction with one's life, was adopted³. The scale is in the public domain (not copyrighted). Credit is given to the authors of the scale: Ed Diener, Robert A. Emmons, Randy J. Larsen and Sharon Griffin as noted in the 1985 article in the *Journal of Personality Assessment*⁴. These are the questions using five-point Likert scales, from 1 "Strongly Disagree" to 5 "Strong Agree":

1. In most ways, my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far, I have obtained the important things I want in life.
5. If I could live my life again, I would not change anything.

We calculate a single indicator of subjective well-being for each individual, using Principal Component Analysis (normalized, media = 0, SD = 1). This procedure allows for capturing more information from the proposed scale versus the simple average of the five items.⁵

3.3.2. Entrepreneurship

GEM provides different measures of entrepreneurship dynamics: (1) The indicator labelled early stage entrepreneurial activity (TEA). This indicator is based on the lifecycle of the entrepreneurial process which is divided into two periods: the first covers nascent entrepreneurs who have undertaken some action to create a new business less than three months old. The second period includes owners/managers of businesses that have paid wages and salaries for over three months, but less than 42 months (Bosma, Jones, Autio, & Levie, 2008); and (2) Entrepreneurs that own and manage a firm older than 42 months are defined like established entrepreneurs.

We use a combination of the above described variables: our first dependent variable is labelled "Entrepreneurs" and combined the TEA with the rate of established entrepreneurship in order to compare people

³ UNDP adopted this scale to measure life satisfaction in some countries. Other efforts such as the Coca-Cola Happiness Institute (created in Spain in 2008 to provide credible scientific information to support the link between happiness and wellness) also uses the SWLS.

⁴ Translations in a number of languages is available at <http://internal.psychology.illinois.edu/~ediener/SWLS.html>.

⁵ Scale reliability coefficient (Cronbachs alpha) = 0.8106. PCA matrix and additional information by request.

involved in both start-up and existing entrepreneurship activities versus people that are not involved in any entrepreneurial activity.

The second dependent variable is nascent entrepreneurs. We are interested in nascent entrepreneurs in order to capture individual that are initiated a business in a very early stage within the year. More specifically we are interested in the necessity- and opportunity-motivated entrepreneurial activity of nascent entrepreneurs. The nascent opportunity-motivated entrepreneurial activity comprises individuals who voluntarily undertake action to create a new venture pursuing perceived business opportunities. They have, as we mentioned in the introduction, a "pull motive", such as the desire for independence, or the purpose of increasing his personal or family income, challenge, status and recognition. The other category involves individuals engaging in necessity-motivated entrepreneurial activity. They are "pushed" into entrepreneurship because being an entrepreneur is the only option for income and wealth generation. Because there are individuals that declare that they are "partially motivated by opportunity" we take in account this third category.

3.3.3. Individual level exogenous control variables

At individual level we control for age, gender, education and personal income. Education is measured by a standardized category using by the UN (seven categories from 0 = non-basic education to 6 = postgraduate degree). Income is calculated by GEM according the gross declared personal (household) income adjusted by GDP per capita of each country. Then, each individual is categorized into the lower, middle or upper third of income of each country. This gives a reasonable proxy of the economic situation facing individuals.

3.3.4. Country-level exogenous control variables

At country level, we control by degree of development using the five categories suggested by the WEF's Global Competitiveness Report (also used by GEM project), that are: 1 = factor-driven economies (less development), 2 = transition to efficiency-driven, 3 = efficiency-driven, 4 = transition to innovation-driven, and 5 = innovation-driven. We also use country controls that capture the variations amongst these countries.

3.3.5. Instrumental variables

2SPLS requires instrumental variables for probit equation. We use GEM variables that are related with the propensity to be entrepreneur well documented in previous research (see, for example, Autio, Pathak, & Wennberg, 2013; Amorós et al., 2019). These set of variables are: (1) a proxy of social capital referred to knowing other entrepreneurs; (2) the individual's perceived self-efficacy related if entrepreneurs claim that have knowledge to undertake entrepreneurial efforts; and (3) the perceived fear of failure in their entrepreneurial activities. These three variables are single items with dichotomous scales. 0 means "No" and 1 means "Yes."

Our final sample is 159,274 individuals that have complete information (non-missing values). Annex 1 shows the proportion of individual in each of the 70 participant countries. From this sample 36,932 individuals are considered entrepreneurs (early-stage and established). Among this group of entrepreneurs 10,877 can be classified as nascent entrepreneurs: 5619 opportunity-motivated nascent entrepreneurs, 2178 nascent entrepreneurs partially motivated by opportunity, and 2770 necessity-motivated nascent entrepreneurs. 310 individuals did not provide information about their motivations.

We perform the previous estimations using only a sub-sample of eleven Latin American countries with 29,285 individuals (valid cases). We do not include the degree of development at country-level variable since the majority of Latin American countries are classified by the World Economic Forum as efficiency driven: hence there is no variance in this variable. Annex 1 lists the countries and the sub-samples.

4. Empirical results

Descriptive statistics and correlation matrix are in [Table 1a and 1b](#).

Results from our all countries estimation are summarized in [Table 2](#).

Results from our Latin America countries estimation are summarized in [Table 3](#).

The results as set out in [Tables 1–3](#) reject our main hypothesis. First, the result show that necessity-motivated nascent entrepreneurship enhances individuals' subjective well-being. Our findings suggest that those entrepreneurs driven by necessity can find in this activity a way to live the lives they want, contrary to those who are unemployed, and that this way of living positively influences their subjective well-being. However, once a certain point of well-being is reached in necessity contexts, we observe no direct relationship between entrepreneurship and well-being. The latter can be supported by the fact that subjective well-being (after controlling for countries) positively affects the likelihood of becoming an opportunity-driven entrepreneur. This result is on the line of emergent regional studies that support the notion of "happiness conducts entrepreneurship" ([Audretsch & Belitski, 2015](#); [Bjørnskov & Foss, 2020](#)).

Instead of pushing individuals into entrepreneurship, high subjective well-being favors a "pull motive" into entrepreneurship, where desire for independence, increment of personal / family income, challenge, status or recognition tugs enterprising intention and action. This resonates with current literature ([Naudé et al., 2014](#)), in that personal and

social relationships as well as perception of opportunities increases the likelihood of becoming an entrepreneur ([Frey, 2010](#)).

Control variables in well-being models, i.e. gender, education and income are positively related. We observe similar results for household income and country development. Age shows a U curve (skewed to the right), meaning that well-being has a relatively high evaluation in young people, following by a reduction and a subsequent increment as the individual gets older. In the entrepreneurship models, age presents an inverted U-curve. The probability of becoming an entrepreneur is lower for women, but positively related to educational level and the degree of country development. However, in the case of necessity-motivated entrepreneurship the coefficient on gender (being a woman) is significant only at 5%.

Control variables such as opportunity recognition, knowing other entrepreneurs, and fear to failure are consistent with previous research ([Amorós et al., 2019](#); [Autio et al., 2013](#)). Having recognized an opportunity increase the probability to enter into entrepreneurship, for both OPP and NEC. Similarly, knowing another entrepreneur (networking) increases the probability to enter into entrepreneurship. And finally, having a larger fear of failure reduces the probability to be an entrepreneur, also most strongly so in the case of nascent entrepreneurship.

For the specific case using the subsample of Latin American countries we find similar results. Is interesting to note that in the case of Latin American countries, necessity entrepreneurship represents a larger percentage of new firm creation in comparison with other regions of the world. In less developed countries, including many in Latin America, necessity-motivated entrepreneurship is not only due to a lack of wage employment, but also due to the lack of public provision of basic goods such as healthcare, safety and education ([Amorós et al., 2019](#); [Naudé, 2011](#); [World Bank, 2010](#)). Necessity entrepreneurs however also, as our results make clear, contribute to subjective well-being. These results are consistent with several conceptualizations ([Benz & Frey, 2008](#)) and empirical results that demonstrate that even necessity-based entrepreneurs could be "pushed" decision, undertake self-employment (entrepreneurship activities) could provide not only a livelihood but also wellbeing gains to those who "escape the misery of joblessness" ([Nikolova, 2019: 680](#)). As [Nikolaev, Boudreaux, and Wood \(2020\)](#) state, engaging in entrepreneurship may lead to higher levels of subjective well-being (i.e., by fulfilling basic psychological needs such as autonomy, competence, and relatedness).

The results from the sample of Latin American countries also suggest that higher subjective well-being could increase the probability to be an entrepreneur (in general) and also opportunity-based (including partially by opportunity). We also corroborate that higher digress of subjective well-being increase the propensity of be opportunity-driven entrepreneur. Simultaneous, individuals that experiment high levels of subjective well-being has less propensity to be involved in necessity-driven entrepreneurial activities.

5. Discussion, limitations and concluding remarks

While there has been a growing literature dealing with the subjective well-being of entrepreneurs in comparison to non-entrepreneurs, there is still a dearth of studies dealing with differences in subjective well-being amongst entrepreneurs who have started their firms for different motivations. Even there are important advances in the study of the relationship between entrepreneurship and well-being, there are important future research opportunities. As [Wiklund et al. \(2019\)](#) propose, well-being is a relevant dependent variable, but is embedded in complex relationships like new venture process, work life balance, institutional environments, socio-economic changes, and others.

In this paper we have responded to the call of [Wiklund et al. \(2019\)](#) to advance in the study of mechanisms that lead well-being via entrepreneurship activities. Specifically, we investigated whether entrepreneurs motivated by necessity report different subjective well-being than those motivated by opportunity. Based on the scant literature we

Table 1a

Descriptive statistics and frequencies (categorical variables).

Variable	Mean	Std. Dev.	Min	Max
Subjective Well-being	0.000	1.000	-2.511	1.642
Entrepreneur	0.232	0.422	0	1
Nascent	0.068	0.252	0	1
Nascent by opportunity	0.035	0.184	0	1
Nascent partially by opportunity	0.014	0.116	0	1
Nascent by necessity	0.017	0.131	0	1
Age	40.059	13.670	18	97
Gender	1.468	0.499	1	2
Education	3.161	1.419	0	6
Income	1.958	0.828	1	3
Opportunities	0.426	0.494	0	1
Know Entrepreneurs	0.394	0.489	0	1
Fear to Failure	0.393	0.488	0	1
Development (country)	3.750	1217	1	5

Gender	Freq.	Percent
Male	84,781	53.23
Female	74,493	46.77
Total	159,274	100.00

Education	Freq.	Percent
Pre-primary education	5774	3.63
Primary education or first stage of basic	15,870	9.96
Lower secondary or second stage of basic	25,258	15.86
(Upper) secondary education	53,059	33.31
Post-secondary non-tertiary education	20,002	12.56
First stage of tertiary education	37,914	23.80
Second stage of tertiary education	1,397	0.88
Total	159,274	100.00

Income	Freq.	Percent
Lowest 33%	58,011	36.42
Middle 33%	49,868	31.31
Upper 33%	51,395	32.27
Total	159,274	100.00

Development (country)	Freq.	Percent
Stage 1: factor driven	14,243	8.94
Transition between stage 1 (factor)	9,946	6.24
Stage 2: efficiency driven	27,504	17.27
Transition between stage 2 (efficiency)	57,126	35.87
Stage 3: innovation driven	50,455	31.68
Total	159,274	100.00

Table 1b
Correlation matrix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Subjective Well-being	1.000													
2. Entrepreneur	0.038	1.000												
3. Nascent	0.015	0.493	1.000											
4. Nascent by opportunity	0.034	0.348	0.706	1.000										
5. Nascent partially by opportunity	0.005	0.214	0.435	-0.023	1.000									
6. Nascent by necessity	-0.027	0.242	0.491	-0.025	-0.016	1.000								
7. Age	0.052	-0.027	-0.069	-0.053	-0.033	-0.027	1.000							
8. Gender	0.009	-0.081	-0.035	-0.034	-0.018	-0.002	0.005	1.000						
9. Education	0.116	-0.049	0.023	0.046	0.009	-0.027	-0.079	-0.044	1.000					
10. Income	0.175	0.097	0.046	0.057	0.021	-0.012	-0.033	-0.080	0.316	1.000				
11. Opportunities	0.094	0.191	0.130	0.104	0.061	0.045	-0.081	-0.040	-0.032	0.084	1.000			
12. Know Entrepreneurs	0.013	0.238	0.125	0.095	0.056	0.050	-0.123	-0.073	0.036	0.121	0.227	1.000		
13. Fear to Failure	-0.073	-0.115	-0.068	-0.059	-0.029	-0.020	0.019	0.071	0.027	-0.040	-0.117	-0.057	1.000	
14. Development (country)	0.164	-0.184	-0.074	-0.032	-0.043	-0.060	0.217	-0.024	0.246	-0.005	-0.199	-0.184	0.095	1.00

Significant correlations ($p < 0.1$) in bold.

hypothesized that necessity entrepreneurs would experience less subjective well-being. Using a large dataset from the Global Entrepreneurship Monitor that covered more than 159,000 individuals in 70 countries we found that necessity-motivated entrepreneurs exhibit relatively high degrees of subjective well-being, similar to those of opportunity-motivated entrepreneurs and second, a that higher degrees of well-being in developing country contexts, where necessity-motivated entrepreneurship tend to be more prevalent, is associated with reduced entrepreneurial entry.

How can we interpret our findings? First, our findings imply a criticism of the validity of the distinction and especially of how the GEM measures necessity and opportunity. This dichotomy has already faced an amount of criticism. Criticisms include those of for instance [Stephan et al. \(2015:13\)](#) who describes it as “oversimplifying” and [Williams and Williams \(2014:23\)](#) who describes it as “misleading...because the motivations change over time” and also because “entrepreneurs are frequently driven by both necessity as well as opportunity”. Although they do not directly criticize the necessity-opportunity dichotomy, [Shane et al. \(2003:269\)](#) stresses that “the nature of the opportunity will influence entrepreneurial decisions” which means that all opportunities or pull-factors are not equal in the sense of leading to the same entrepreneurial behavior. [Fairlie and Fossen \(2017\)](#) even proposed an alternative way to measure necessity and opportunity motivations by objective measures rather than self-reported measures⁶. More recently [Nikolova \(2019\)](#) finds that necessity-based entrepreneurs boosts overall mental health, that is an important component of general well-being of the individuals.

Thus, our results may reflect that motivations change, that individuals may have problems with accurate recall, and that both pull and push forces may operate at the same time. In a way, although unexpected, our findings are consistent with understandings and models of entrepreneurship wherein motivations are dynamic, wherein entrepreneurs can learn about their own entrepreneurial abilities and learn by doing, see also e.g. [Stephan et al. \(2015\)](#). This is also consistent with the finding that there is significant variation in the rates of necessity-motivated start-up activity over time in virtually all countries ([Amorós et al., 2009](#)).

Secondly, our findings provide further evidence that the dichotomy

⁶ Specifically, they propose using an individual’s labor market status prior to starting as an entrepreneur to determine whether the individual is motivated by opportunity or necessity. If an individual was unemployed before embarking on entrepreneurship, he or she would be classified as being necessity motivated.

of opportunity vs necessity motivation does not exist in such clear-cut categories. Consider for instance that many studies, that compare the characteristics and performances of firms run by either necessity-or-opportunity motivated entrepreneurs, have interestingly found that in most areas, that necessity-motivated entrepreneurs are not that different from opportunity-motivated entrepreneurs as is often supposed (they major area where they do tend to be different is in the profitability of their firms).

For example, there is no evidence that necessity and opportunity-motivated entrepreneurs differ in terms of their attitude towards risk-taking (e.g. [Verheul et al., 2010](#); [Van der Zwan et al., 2016](#)), or in terms of duration or survival of their firms (e.g. [Block & Sandner, 2009](#); [Poschke, 2010](#)), or in terms of the gender of the entrepreneur ([Van der Zwan et al., 2016](#)). Based on a study of Ugandan entrepreneurs, [Langevan, Namatovu, and Dawa \(2012\)](#) found that necessity-motivated entrepreneurs often had high growth aspirations, as one would typically expect of opportunity-motivated entrepreneurs. And [Calderon et al. \(2016\)](#) found that a third of the necessity-motivated entrepreneurs in their sample has observable characteristics or traits that were similar to those of opportunity-motivated entrepreneurs.

Our findings could be interesting not only for conceptual but also for practical policy purposes. For instance, given that it is likely that the subjective well-being of necessity-motivated entrepreneurs are due to factors that have less to do with firm performance, policy efforts to raise the performance of such firms may adversely impact on the subjective well-being of entrepreneurs. Thus, our findings imply that policy makers be more concerned about the impact of their entrepreneurship and small business policies on subjective well-being. This presupposes that more research be done to better understand the factors that drive the dynamic and changing motivations of entrepreneurs.

Our research is subject to limitations. The relations between entrepreneurship and wellbeing are complex. Subjective well-being is not constant and this variation depends, to a large extent, on the changing nature of temporal, spatial and institutional contexts ([Ryff, 2019](#)). Our empirical exercise is merely exploratory by nature because we cover some spatial dimension using cross-sectional data from different countries, which does not allow us to study the full dynamic range of well-being processes. In short, we are not considering the time dimension of well-being ([Wach et al., 2020](#)). Unfortunately, we are not aware of longitudinal databases that provide comprehensive and fine-grained measures of both subjective well-being and entrepreneurship activities. It would be a valuable contribution if future research could address this, and take into consideration time-longitudinal dimension for well-being dynamics as well as for changes in entrepreneurship dynamics

Table 2
Estimation models entrepreneurship and subjective well-being.

Variables	Model I		Model II		Model III		Model IV		Model V	
	Equation for Subjective well-being	Equation for the likelihood of being an entrepreneur	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur by opportunity	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur partially by opportunity	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur by necessity
Entrepreneur	0.258*** (0.008)									
Nascent			0.2571*** (0.009)							
Nascent by opportunity					0.269*** (0.009)					
Nascent partially by opportunity							0.295*** (0.014)			
Nascent by necessity									0.341*** (0.019)	
Subjective well-being		0.684*** (0.027)		0.234*** (0.034)		0.508*** (0.042)		0.164*** (0.059)		-0.280*** (0.051)
Opportunities		0.169*** (0.010)		0.315*** (0.013)		0.285*** (0.016)		0.310** (0.059)		0.242*** (0.020)
Know Entrepreneurs		0.478*** (0.009)		0.450*** (0.011)		0.428*** (0.014)		0.389*** (0.020)		0.333*** (0.018)
Fear to Failure		-0.165*** (0.009)		-0.212*** (0.012)		-0.210*** (0.016)		-0.178*** (0.023)		-0.151*** (0.020)
Income	0.165*** (0.004)		0.190*** (0.004)		0.177*** (0.041)		0.188*** (0.005)		0.231*** (0.005)	
Age	-0.037*** (0.001)	0.088*** (0.002)	-0.033*** (0.001)	0.054*** (0.002)	-0.031*** (0.001)	0.049*** (0.003)	-0.036*** (0.002)	0.055*** (0.005)	-0.038*** (0.002)	0.042*** (0.004)
Age2	0.001*** (0.001)	-0.001*** (0.001)	0.001*** (0.001)	-0.001*** (0.001)	0.001*** (0.001)	-0.001*** (0.001)	0.001*** (0.001)	-0.001*** (0.001)	0.001*** (0.001)	-0.001*** (0.001)
Gender	0.116*** (0.006)	-0.264*** (0.008)	0.107*** (0.006)	-0.174*** (0.011)	0.111*** (0.006)	-0.195*** (0.014)	0.113*** (0.010)	-0.141*** (0.019)	0.089*** (0.008)	-0.042** (0.017)
Education	0.040*** (0.002)	-0.051*** (0.004)	0.030*** (0.002)	0.016*** (0.005)	0.021*** (0.002)	0.035 (0.006)	0.027*** (0.004)	0.023*** (0.009)	0.051*** (0.004)	-0.029*** (0.008)
Development (country)	0.180*** (0.007)	-0.252*** (0.036)	0.120*** (0.008)	0.029** (0.044)	0.108*** (0.009)	0.025* (0.064)	0.187*** (0.014)	-0.144*** (0.030)	0.108*** (0.012)	0.111*** (0.023)
Constant	-0.477** (0.037)	-0.938*** (0.062)	0.376*** (0.037)	-2.162*** (0.0610)	0.473*** (0.041)	-2.352*** (0.075)	0.890** (0.069)	-3.190*** (0.117)	0.664*** (0.060)	-2.620*** (0.095)
F or LR Chi ²	416.96***	24333.06***	364.00***	9078.06***	332***	6337***	318***	3289***	316***	2866***
R ² or Pseudo R2	0.16	0.14	0.16	0.14	0.16	0.14	0.16	0.15	0.16	0.11
Number of observations	159,274	159,274	132,748	132,748	127,984	127,984	124,732	124,732	125,310	125,310

Controls by country no reported.

Standard errors in parenthesis *** p < 0.01, ** p < 0.05, *p < 0.1.

Table 3
Estimation models entrepreneurship and subjective well-being in Latin América.

	Model I		Model II		Model III		Model IV		Model V	
Variables	Equation for Subjective well-being	Equation for the likelihood of being an entrepreneur	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur by opportunity	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur partially by opportunity	Equation for Subjective well-being	Equation for the likelihood of being a nascent entrepreneur by necessity
Entrepreneur	0.192*** (0.018)									
Nascent			0.198*** (0.020)							
Nascent by opportunity					0.221*** (0.019)					
Nascent partially by opportunity							0.205*** (0.028)			
Nascent by necessity									0.244*** (0.040)	
Subjective well-being		0.809*** (0.084)		0.351 (0.109)		0.745*** (0.143)		0.549*** (0.179)		-0.8087*** (0.187)
Opportunities		0.136*** (0.023)		0.262*** (0.028)		0.237*** (0.037)		0.153*** (0.046)		0.286*** (0.047)
Know Entrepreneurs		0.463*** (0.019)		0.426*** (0.023)		0.418*** (0.030)		0.404*** (0.038)		0.266*** (0.039)
Fear to Failure		-0.146*** (0.023)		-0.194*** (0.027)		-0.153*** (0.037)		-0.137*** (0.047)		-0.241*** (0.047)
Income	0.117*** (0.007)		0.124*** (0.007)		0.109*** (0.009)		0.166*** (0.009)		0.161*** (0.010)	
Age	-0.024*** (0.003)	0.087*** (0.004)	-0.021*** (0.002)	0.059*** (0.005)	-0.020*** (0.003)	0.055*** (0.005)	-0.022*** (0.003)	0.058*** (0.007)	-0.025*** (0.004)	0.045*** (0.007)
Age2	0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	0.001*** (0.000)	-0.001*** (0.000)	0.001*** (0.000)	-0.001*** (0.000)	0.001*** (0.000)	-0.001*** (0.000)
Gender	-0.018 (0.012)	-0.138*** (0.018)	-0.008 (0.012)	-0.001*** (0.021)	-0.004 (0.013)	-0.100*** (0.030)	0.013 (0.015)	-0.199*** (0.037)	-0.049*** (0.015)	0.051* (0.039)
Education	0.066*** (0.004)	-0.056*** (0.010)	0.036*** (0.005)	0.001 (0.012)	0.031*** (0.005)	0.018 (0.016)	0.034*** (0.006)	0.023 (0.020)	0.055*** (0.006)	-0.011 (0.020)
Constant	0.846*** (0.073)	-3.177*** (0.105)	0.803*** (0.077)	-2.663*** (0.128)	0.950*** (0.077)	-3.104*** (0.165)	0.949*** (0.107)	-2.858*** (0.194)	1.036*** (0.137)	-2.705*** (0.249)
F or LR Chi ²	171***	3330***	135***	1955***	131***	1228***	121***	960***	120***	554***
R ² or Pseudo R2	0.084	0.094	0.085	0.100	0.09	0.11	0.080	0.15	0.080	0.100
Number of observations	29,285	29,285	23,834	23,834	22,444	22,444	21,740	21,740	21,630	21,630

Controls by country no reported.

Standard errors in parenthesis *** p < 0.01, ** p < 0.05, *p < 0.1.

and institutional change. Another limitation of our research that future research could address is to take into account that across individuals there are different “starting” levels of subjective well-being that depends of a different set of institutional even local conditions that are dynamic. For example, in our specific exercise for Latin America, is relevant to consider that this region works under the French-Spanish law tradition, religion and institutions. This is obviously different in those other emerging regions of the world, so more comparative analyses will be very relevant. As we show in our results subjective well-being and motivations are considered as potential bases for entrepreneurship endeavors, but further research could be more connected it with relevant and specific regional variables like culture, religion, institutions and law. Because we have a cross sectional design with a relatively small number of variables, is difficult to stablish more strong relationships. The use of multilevel methodologies could help to analyze these types of complex relationships where entrepreneurs have different “starting”

levels of subjective well-being. Finally, the GEM data provides rich information but suffers from several limitations at firm level indicators. Future research could be related to understand the interdependencies of well-being not only at pure economic dimension, but also phycological, sociological and policy-oriented level.

Acknowledgements

We extend our thankfulness to Niels Bosma for his helpful support defining this research. We also appreciate the support of the Global Entrepreneurship Monitor project consortium. José Ernesto Amorós and Oscar Cristi also acknowledges the support of The National Fund for Scientific and Technological Development, FONDECYT Chile, Project No 1130919 “Are entrepreneurs happier than others? The relationship between happiness, well-being and entrepreneurial activity at country and individual level”. All errors are own.

Appendix A. Sample by country

Country	Freq.	Percent	Cum.	Country	Freq.	Percent	Cum.
Algeria	1013	0.64%	0.64%	Luxembourg	838	0.53%	44.06%
Angola	716	0.45%	1.09%	Macedonia	1155	0.73%	44.79%
Argentina	1039	0.65%	1.74%	Malawi	1911	1.20%	45.99%
Barbados	963	0.60%	2.34%	Malaysia	1823	1.14%	47.13%
Belgium	1166	0.73%	3.07%	Mexico	1729	1.09%	48.22%
Bosnia and Herzegovina	1694	1.06%	4.14%	Namibia	1470	0.92%	49.14%
Botswana	1574	0.99%	5.13%	Netherlands	2078	1.30%	50.45%
Brazil	8970	5.63%	10.76%	Nigeria	2336	1.47%	51.91%
Canada	1960	1.23%	11.99%	Norway	1126	0.71%	52.62%
Chile	5424	3.41%	15.39%	Panama	1763	1.11%	53.73%
China	2608	1.64%	17.03%	Peru	1296	0.81%	54.54%
Colombia	3054	1.92%	18.95%	Philippines	2172	1.36%	55.90%
Croatia	1500	0.94%	19.89%	Poland	1386	0.87%	56.77%
Czech Republic	1458	0.92%	20.81%	Portugal	1144	0.72%	57.49%
Ecuador	1853	1.16%	21.97%	Puerto Rico	1352	0.85%	58.34%
Estonia	1200	0.75%	22.72%	Romania	1468	0.92%	59.26%
Finland	1229	0.77%	23.49%	Russia	1030	0.65%	59.91%
France	1067	0.67%	24.16%	Singapore	1392	0.87%	60.78%
Germany	3945	2.48%	26.64%	Slovakia	1405	0.88%	61.67%
Ghana	1658	1.04%	27.68%	Slovenia	1351	0.85%	62.51%
Greece	1551	0.97%	28.66%	South Africa	3071	1.93%	64.44%
Guatemala	1567	0.98%	29.64%	Spain	12359	7.76%	72.20%
Hungary	1466	0.92%	30.56%	Suriname	987	0.62%	72.82%
India	2419	1.52%	32.08%	Sweden	1177	0.74%	73.56%
Indonesia	4452	2.80%	34.87%	Switzerland	1329	0.83%	74.40%
Iran	2681	1.68%	36.56%	Taiwan	1774	1.11%	75.51%
Ireland	1127	0.71%	37.27%	Thailand	2285	1.43%	76.94%
Israel	1267	0.80%	38.06%	Trinidad and Tobago	1481	0.93%	77.87%
Italy	1117	0.70%	38.76%	Turkey	23592	14.81%	92.69%
Jamaica	544	0.34%	39.10%	Uganda	2427	1.52%	94.21%
Japan	1112	0.70%	39.80%	United Kingdom	979	0.61%	94.82%
Korea	1562	0.98%	40.78%	United States	3514	2.21%	97.03%
Latvia	1199	0.75%	41.54%	Uruguay	1238	0.78%	97.81%
Libya	1790	1.12%	42.66%	Vietnam	1779	1.12%	98.92%
Lithuania	1399	0.88%	43.54%	Zambia	1713	1.08%	100.00%
				Total	159274	100	

Appendix B. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jbusres.2020.11.044>.

References

- Amit, R., & Muller, E. (1995). Push” and “Pull” entrepreneurship. *Journal of Small Business and Entrepreneurship*, 12(4), 64–80.
- Amit, R., MacCrimmon, K., Zietsma, C., & Oesch, J. M. (2001). Does money matter? Wealth attainment as the motive for initiating growth-orientated technology businesses. *Journal of Business Venturing*, 16(2), 119–143.
- Amorós, J. E., Ciravegna, L., Mandakovic, V., & Stenholm, P. (2019). Necessity or opportunity? The effects of state fragility and economic development on entrepreneurial efforts. *Entrepreneurship Theory and Practice*, 43(4), 725–750. <https://doi.org/10.1177/1042258717736857>.
- Amorós, J. E., Cristi, O., & Minniti, M. (2009). Driving forces behind entrepreneurship: Differences in entrepreneurship rate, level and its volatility across countries. *Frontiers in Entrepreneurship Research*, Issue 16, article 2.
- Audretsch, D. B., & Belitski, M. (2015). Is happiness conducive to entrepreneurship? Exploring subjective well-being–entrepreneurship relationship across major european cities. *Henley Centre for Entrepreneurship. Discussion Paper Number CFE-2015-01*.

- Autio, E., Pathak, S., & Wennberg, K. (2013). Consequences of cultural practices for entrepreneurial behaviors. *Journal of International Business Studies*, 44(4), 334–362.
- 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.
- Benz, M., & Frey, B. (2008). Being independent is a great thing: Subjective evaluations of employment and hierarchy. *Economica*, 75, 362–383.
- Birley, S., & Westhead, P. (1994). A taxonomy of business start-up reasons and their impact on firm growth and size. *Journal of Business Venturing*, 9(1), 7–31.
- Block, J., & Koellinger, P. (2009). I can't get no satisfaction – necessity entrepreneurship and procedural utility. *Kyklos*, 62(2), 191–209.
- Block, J., & Sandner, P. (2009). Necessity and opportunity entrepreneurship and their duration in self-employment: evidence from German micro data. *Journal of Industry, Competition and Trade*, 9(2), 117–137.
- Block, J., & Wagner, M. (2010). Necessity and opportunity entrepreneurs in Germany: characteristics and earning differentials. *Schmalenbach Business Review*, 62, 961–987.
- Bolle, F., & Kemp, S. (2008). Can we compare life satisfaction between nationalities? *Evaluating Actual and Imagined Situations, Social Indicators Research*, 90(3), 397–408.
- Bolle, F., Okhrin, Y., & Vogel, C. (2009). A note on interdependent happiness. *The Journal of Socio-Economics*, 38, 713–721.
- Bjørnskov, C., & Foss, N. J. (2020). Well-being and entrepreneurship: Using establishment size to identify treatment effects and transmission mechanisms. *PLoS ONE*, 15(1), Article e0226008. <https://doi.org/10.1371/journal.pone.0226008>.
- Bosma, N., Jones, K., Autio, E., & Levie, J. (2008). *Global Entrepreneurship Monitor 2007 Executive Report*. London: Global Entrepreneurship Research Association.
- Bradley, D. E., & Roberts, J. A. (2004). Self-employment and job satisfaction: Investigating the role of self-efficacy. *Depression, and Seniority, Journal of Business Management*, 42(1), 37–58.
- Calderon, G., Iacovone, L., and Juarez, L. (2016). Opportunity versus necessity: understanding the heterogeneity of female micro-entrepreneurs. *The World Bank Economic Review*. doi:10.1093/wber/lhw010.
- Carsrud, A., & Brännback, M. (2011). Entrepreneurial motivations: What do we still need to know? *Journal of Small Business Management*, 49(1), 9–26.
- Carter, N. M., Gartner, W. B., Shaver, K. G., & Gatewood, E. J. (2003). The career reasons of nascent entrepreneurs. *Journal of Business Venturing*, 18(1), 13–39.
- Cassar, G. (2007). Money, money, money? *A Longitudinal Investigation of Entrepreneurial Career Reasons, Growth Preferences and Achieved Growth, Entrepreneurship and Regional Development*, 19(1), 89–107.
- Conceição, P., & Bandura, R. (2008). Measuring subjective wellbeing: A summary review of the literature. *UNDP Development Studies Working Papers Series*, May.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542–575.
- Douglas, E. J., & Shepherd, D. A. (2002). Self-employment as a career choice: Attitudes. *Entrepreneurial Intentions, and Utility Maximization, Entrepreneurship Theory and Practice*, 26(3), 81–90.
- Fairlie, R.W. and Fossen, F.M. (2017). Opportunity versus Necessity Entrepreneurship: Two Components of Business Creation, SIEPR Discussion Paper no. 17-014. Stanford University.
- Fors, F., & Kulin, J. (2016). Bringing affect back. *Measuring and Comparing Subjective Well-being across countries, Social Indicators Research*, 127(1), 323–339.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist*, 56(3), 218.
- Frey, B. S. (2010). *Happiness: A Revolution in Economics*. Cambridge, Mass.: MIT Press.
- Gries, T., & Naudé, W. (2011). Entrepreneurship and human development: A capability approach. *Journal of Public Economics*, 95(3–4), 216–224.
- Hall, J., Matos, S., Sheehan, L., & Silvestre, B. (2012). Entrepreneurship and innovation at the base of the pyramid: A recipe for inclusive growth or social exclusion? *Journal of Management Studies*, 49(4), 785–812.
- Hamilton, B. H. (2000). Does entrepreneurship pay? *An Empirical Analysis of the Returns to Self-Employment, Journal of Political Economy*, 108(3), 604–631.
- Hessels, J., Van Gelderen, M., & Thurik, R. (2008). Entrepreneurial aspirations, motivations and their drivers. *Small Business Economics*, 31(3), 323–339.
- Kautonen, T., & Palmroos, J. (2009). The impact of a necessity-based start-up on subsequent entrepreneurial satisfaction. *International Entrepreneurship and Management Journal*, 6, 285–300.
- Keyes, C. L. (2013). Promoting and protecting positive mental health: Early and often throughout the lifespan. In C. L. Keyes (Ed.), *Mental Well-Being* (pp. 3–28). Springer, Atlanta, USA: International Contributions to the Study of Positive Mental Health.
- Keshk, O. (2003). CDSIMEQ: A program to implement two-stage probit least squares. *The Stata Journal*, 3(2), 157–167.
- Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5/6), 411–432.
- Lange, T. (2012). Job satisfaction and self-employment: Autonomy or personality. *Small Business Economics*, 38(2), 165–177.
- Langevan, T., Namatovu, R., & Dawa, S. (2012). Beyond necessity and opportunity entrepreneurship: motivations and aspirations of young entrepreneurs in Uganda. *International Development Planning Review*, 34(4), 439–459.
- Maddala, G. S. (1983). *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge, MA: Cambridge University Press.
- Naude, W., Amorós, J. E., & Cristi, O. (2014). Surfing the appetite may sicken: Entrepreneurship and the happiness of nations. *Small Business Economics*, 42(3), 523–540.
- Naudé, W. (2011). Entrepreneurship is not a binding constraint on growth and development in the poorest countries. *World Development*, 39(1), 33–44.
- Nikolaev, B., Boudreaux, C. J., & Wood, M. (2020). Entrepreneurship and subjective well-being: The mediating role of psychological functioning. *Entrepreneurship Theory and Practice*, 44(3), 557–586.
- Nikolova, M. (2019). Switching to self-employment can be good for your health. *Journal of Business Venturing*, 34(4), 664–691.
- 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.
- Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *Journal of Positive Psychology*, 3, 137–152.
- Poschke, M. (2010). *Entrepreneurs out of Necessity: A Snapshot*, IZA Discussion Paper no. 4893. Bonn: IZA Institute of Labor Economics.
- Reynolds, P., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., ... Chin, N. (2005). *Global entrepreneurship monitor: Data collection design and implementation 1998–2003*. *Small Business Economics*, 24(3), 205–231.
- Rietveld, C. A., van Kippersluis, H., & Thurik, A. R. (2015). Self-employment and health: Barriers or benefits? *Health Economics*, 24, 1302–1313.
- Ryff, C. D. (2019). Entrepreneurship and eudaimonic well-being: Five venues for new science. *Journal of Business Venturing*, 34(4), 646–663.
- Segal, G., Borgia, D., & Schoenfeld, J. (2005). The motivation to become an entrepreneur. *International Journal of Entrepreneurial Behaviour and Research*, 11(1), 42–57.
- Shane, S. (2009). Why encouraging more people to become entrepreneurs is bad public policy. *Small Business Economics*, 33(2), 141–149.
- Shane, S., Locke, E. A., & Collins, C. J. (2003). Entrepreneurial motivation. *Human Resource Management Review*, 13, 257–279.
- Shir, N., Nikolaev, B. N., & Wincent, J. (2019). Entrepreneurship and well-being: The role of psychological autonomy, competence, and relatedness. *Journal of Business Venturing*, 34(5), Article 105875. <https://doi.org/10.1016/j.jbusvent.2018.05.002>.
- Stephan, U. (2018). Entrepreneurs' mental health and well-being: A review and research agenda. *Academy of Management Perspectives*, 32(3), 290–322.
- Stephan, U., Hart, M., & Drews, C.-C. (2015). *Understanding Motivations for Entrepreneurship: A Review of Recent Evidence*. Enterprise Research Centre: Rapid Evidence Assessment Paper.
- Van der Zwan, P., Thurik, A. R., Verheul, I., & Hessels, J. (2016). Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs. *Eurasian Business Review*, 6, 273–295.
- Wach, D., Stephan, U., Weinberger, E., & Wegge, J. (2020). Entrepreneurs' stressors and well-being: A recovery perspective and diary study. *Journal of Business Venturing*, 106016.
- Warr, P. (2017). Self-employment, personal values, and varieties of happiness-unhappiness. *Journal of Occupational Health Psychology*, 23(3), 388–401.
- Wiklund, J., Nikolaev, B., Shir, N., Foo, M. D., & Bradley, S. (2019). Entrepreneurship and well-being. *Journal of Business Venturing*, 34(4), 579–752.
- Williams, N., & Williams, C.-C. (2014). Beyond necessity versus opportunity entrepreneurship: Some lessons from English deprived urban neighborhoods. *International Entrepreneurship and Management Journal*, 10, 23–40.
- Wong, P. K., Ho, Y. P., & Autio, E. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small Business Economics*, 24, 335–350.
- Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Massachusetts: The MIT Press.
- Group, World Bank (Ed.). (2010). *World Development Indicators 2010*. Washington DC: World Bank Publications.