

## Considering Education for Opportunity versus Necessity-based Entrepreneurs: Does Income Lead to Greater Entrepreneurial Well-Being?

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**Abstract:** *This study is motivated through the paradox on the well-being of self-employed that self-employment is associated with greater satisfaction across various domains despite the lower income levels of such entrepreneurs. Since not all self-employed gain higher returns to income, there is a need to question to what extent income contributes to well-being as well as the most critical factors such as education or the reason that the entrepreneur starts a new business could play a role in this relationship between income and well-being. Using GEM's data on entrepreneurs from a wide set of countries all over the world, the effect of income on entrepreneurial well-being is tested treating education as the moderator across necessity and opportunity entrepreneurs. While necessity entrepreneurs with relatively lower education levels gain higher returns to income, opportunity entrepreneurs gain higher returns to income when their education levels are higher. The results shed light on how the effect of income on entrepreneurial well-being changes adversely with the increasing education levels for different entrepreneurial motivations.*

**Keywords:** Necessity Entrepreneurship, Opportunity Entrepreneurship, Well-Being, Income, Education, GEM

**JEL Classification:** L26, M13, M10

### 1. Introduction

The increasing startup activities across the world resulted in an ever growing body of research on entrepreneurial well-being (Cooper & Artz, 1995; Morris, Kuratko, Schindehutte, & Spivack, 2012; Sáiz-Álvarez, Corduras Martínez, & Cuervo-Arango Martínez, 2014; Shir, 2015). Entrepreneurial well-being is typically measured in terms of general life satisfaction and satisfaction in entrepreneurial domains such as business growth, and work-life balance (Shir, 2015). Empirical evidence exists on higher job satisfaction or life satisfaction of self-employed than wage earners (Andersson, 2008; Carree & Verheul, 2012; Mahadea & Ramroop, 2015; VandenHeuvel & Wooden, 1997). Within this stream of research, an interesting point is made that the increase in satisfaction happens despite the lower incomes of the self-employed (Binder & Coad, 2013; Hamilton, 2000). Shir (2015) calls this as a puzzling situation as the self-employed usually has higher income fluctuations and lower average salaries than wage earners (Carrington, McCue, & Pierce, 1996; Hamilton, 2000; Van Praag & Versloot, 2007). While average income is found to be significantly related to national happiness at country level (Deaton, 2007), the nexus between income and well-being of self-employed quests for factors such as human capital, and other intrinsic and extrinsic motives on this relationship.

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The reason to establish a business, in other words the entrepreneurial motives, can thus play a significant role in the relation between income and well-being as pointed out by (Salinas-Jiménez, Artés, & Salinas-Jiménez, 2010) that individuals value income differently depending on the socio-economic factors and motives. Entrepreneurial motives in terms of the reasons to start a business find a wide place in explaining entrepreneurial wellness in the management and entrepreneurship literature (Carree & Verheul, 2012). Binder and Coad (2013) explore the subjective well-being of two groups of self-employed where the first group moves from regular employment and the second group moves from unemployment to self-employed. It turns out that the first group of individuals that are commonly referred to as opportunity entrepreneurs have higher well-being than the second group of so called necessity entrepreneurs. While opportunity entrepreneurs are found to have higher preference for self-employment (Bhola, Verheul, Thurik, & Grilo, 2006; Block & Koellinger, 2009), they also attain higher satisfaction with work based on various contexts such as GEM's data on Spanish entrepreneurs (Sáiz-Álvarez et al., 2014) or German nascent entrepreneurs (Block & Koellinger, 2009).

Education is on another hand another important human capital that has been controlled in various prior studies in measuring the determinants of entrepreneurial well-being (Salinas-Jiménez et al., 2010). While education is positively and significantly related to life satisfaction, the significance disappears in the presence of some extrinsic (i.e., good income, safe job) or intrinsic (i.e., feeling of accomplishment) motivations (Salinas-Jiménez et al., 2010). Thus, education appears to affect well-being or life satisfaction differently in the presence of various intrinsic and extrinsic motives. Education is also found to be not related or negatively related to satisfaction in some other studies (Bradley & Roberts, 2004; Carree & Verheul, 2012). Besides, higher education is linked to higher returns particularly for opportunity entrepreneurs (Fossen & Büttner, 2013).

The contingency of the relation between income and well-being on the type of entrepreneurial motivation (necessity versus opportunity) along with education could provide an explanation to the unforeseen higher life satisfaction of self-employed. Education is posited to moderate the relationship between income and well-being differently for entrepreneurs with different motives. Using GEM data on entrepreneurs over 90 countries, the effect of income on well-being is found to be higher for necessity entrepreneurs with lower education levels while higher effects are observed for opportunity entrepreneurs with higher education levels.

The rest of this paper is structured as follows. The theoretical framework is developed in Section 2 based on an extensive discussion of the underlying variables within the context of entrepreneurship literature. The concepts of entrepreneurial well-being, necessity and opportunity entrepreneurship, and education's role as a human capital in these relationships are briefly discussed in this section. Information on the dataset of this study, methodology, and findings of the empirical analyses are presented in Section 3. Finally, Section 4 concludes with explorations on the difficulties and limitations of this study as well as directions for future research.

## **2. Theoretical Framework**

### **2.1. Entrepreneurial Well-being**

The concept of well-being of an individual is a highly studied topic in various academic disciplines including psychology, economics, and organizational and management sciences for more than 50 years now (Keyes, 2007). The earlier conceptualization of well-being starts with the hedonic attributes such as happiness or satisfaction initiated by Schwarz and Clore (1983) and Diener (1984). Diener (1984) explains happiness from three different perspectives where in the first perspective one's happiness is evaluated objectively with external criteria such as virtue or holiness. Happiness can be assessed more subjectively as either one's own evaluation of the quality of her life, or pleasant and unpleasant emotions experienced during the daily discourse of life leading to the second and third perspectives of understanding happiness. Diener's conceptualization of well-being drawing on hedonic or desire theories is referred to as subjective well-being and forms one of the two main theoretical approaches measuring well-being (Keyes, 2007; Shir, 2015).

In following studies, Diener et al. (1999) develop a more comprehensive scale where subjective well-being is measured in terms of four components that are life satisfaction, domain satisfaction, and pleasant (and unpleasant) effects. Life satisfaction is measured in one's satisfaction with current, future and past lives as well as the desire to change life and significant others' views of one's life (Diener et al., 1999). Pleasant and unpleasant effect reflect moods and emotions such as joy, elation, sadness, or stress that one experiences in reaction to events in their lives. Lastly, satisfaction is assessed in multiple domains such as work, family, leisure, health or self that are important for one's overall well-being.

The second theoretical perspective for assessing well-being is based on "objective" list theories or eudaimonic movement (Ryff, 1989; Shir, 2015) and commonly referred to as psychological well-being among behavioral and social scientists. While the first one reflects one's happiness and satisfaction with life along with positive and negative affect, the second perspective focuses on an individual's own evaluation of his/her psychological well-being to fully functioning (Keyes, 2007; Ring, Höfer, Mcgee, Hickey, & O'Boyle, 2007; Ryff & Keyes, 1995). Psychological well-being is also referred to as positive functioning and the most important dimensions of psychological well-being are identified as self-actualization, full functioning, individuation, maturity, and successful adult development (Allport, 1961; Keyes, 2007; Maslow, 1968; Rogers, 1995).

Both subjective well-being and psychological well-being are important features of quality of life and are used to measure satisfaction and happiness in various domains not only for individuals but also for communities and nations (Keyes, 2007). However, there is still a need to conceptualize the well-being of an entrepreneur as well-being of entrepreneurs may differ significantly from other waged employed individuals even based on a more objective evaluation of happiness such as wealth, income, or educational attainments. While well-being of entrepreneurs is measured frequently as subjective well-being in many studies (Carree & Verheul, 2012; Sáiz-Álvarez et al., 2014; Shir, 2015), entrepreneurial well-being is a new notion conceptualized recently by Shir (2015) as composed of four different components. According to Shir (2015), these components are general life satisfaction as an entrepreneur, satisfaction in entrepreneurial domains such as business profit, business growth or work-life balance, and positive and negative experiences related to entrepreneurship. The definition of entrepreneurial well-being indeed overlaps with Diener et al. (1999)'s conceptualization of subjective well-being which is associated with the phenomena of happiness in general.

While entrepreneurial well-being is a new terminology brought in to the entrepreneurship literature by Shir (2015), the earlier discussions of many exploring the well-being of an entrepreneur focus on various dimensions of the subjective well-being such as work-life balance, leisure time, job satisfaction or more comprehending measures of satisfaction in multiple domains (Carree & Verheul, 2012; Kautonen & Palmroos, 2010). This study uses the GEM data on well-being and other several aspects of entrepreneurs from all over the world. In GEM methodology, well-being is measured through items of work satisfaction and affect (Sáiz-Álvarez et al., 2014) reflecting some dimensions of subjective well-being conceptualized by Shir (2015).

## **2.2. Motives of Entrepreneurial Activities: Necessity and Opportunity Entrepreneurship**

A growing body of literature focuses on the concept of opportunity in entrepreneurship (Eckhardt & Shane, 2003; Shane & Venkataraman, 2000; Short, Ketchen, Shook, & Ireland, 2010; Venkataraman, 1997). Short et al. (2010: 40) refer to the importance of opportunities such that "Without an opportunity, there is no entrepreneurship." Eckhardt and Shane (2003) explain entrepreneurial activities in terms of particular opportunities that the potential entrepreneurs face and the actions of such entrepreneurs in receiving these opportunities as opposed to the existing theories of entrepreneurship in understanding entrepreneurial processes.

While opportunity is a central concept in entrepreneurship research (Short et al., 2010), individuals may be forced into the entrepreneurship based on necessity forming the other side of the medallion in terms of motives to engage in entrepreneurship. The concept of necessity entrepreneurship was first introduced in GEM studies in 2001 and reflects *forced entrepreneurship* representing the individuals who have no better choices for work (Bosma & Harding, 2006; Kautonen & Palmroos, 2010; Poschke, 2010; Reynolds et al., 2005). While entrepreneurship cannot be thought independently from opportunities, necessity entrepreneurs form

a fairly large group of entrepreneurs especially in countries characterized by high entrepreneurship rates and lower Gross Domestic Product (GDP) per capita (Poschke, 2010). Thus, necessity entrepreneurship along with opportunity entrepreneurship form the two types of entrepreneurship based on the individuals' motives to engage in entrepreneurial activities.

Although self-employed is in general associated with higher levels of job satisfaction or well-being (Benz & Frey, 2008; Blanchflower & Oswald, 1998; Block & Koellinger, 2009; Parasuraman & Simmers, 2001) than waged employees, there is more differentiation at the entrepreneur level in terms of well-being with respect to the entrepreneurial motives. Block and Koellinger (2009) find that nascent entrepreneurs who start their businesses after a period of unemployment because of necessity are significantly less satisfied with their jobs. On the same line, necessity entrepreneurs are more willing to go back to salaried employment later in their entrepreneurial careers (Kautonen & Palmroos, 2010). However, Kautonen and Palmroos (2010) add to these that such entrepreneurs are less likely to end their entrepreneurial careers as the level and the regularity of their income improve based on a sample of more than 500 Finnish micro enterprises.

Despite differences in measurement of well-being in the forms of job satisfaction (quality of work, salary or career opportunities, and etc.) or well-being (satisfaction with life or work-life balance), the majority of empirical research, though scarce, highlight entrepreneurs with opportunity motives tend to gain higher entrepreneurial satisfaction than the ones with necessity motives (Arkali Olcay & Kunday, 2016; Binder & Coad, 2013; Block & Koellinger, 2009; Kautonen & Palmroos, 2010; Sáiz-Álvarez et al., 2014). Discovering or creating opportunities to start new ventures rather than being pushed into self-employment because of necessities is shown to play a central role in entrepreneurial well-being as is addressed by the prior literature. However, motives can explain the well-being up to a certain extent. There exist other factors such as general and specific human capital, socio-demographic factors, and venture or individual characteristics that might play critical roles in entrepreneurship and well-being nexus.

### **2.3. Education as a Human Capital on Entrepreneurial Well-being**

Entrepreneurs with high levels of formal education are found to gain higher returns to education on income than waged employees based on a study using a large representative US data (van Praag, van Witteloostuijn, & van der Sluis, 2013). Higher levels of human capital (i.e., education) lead to higher productivity for business owners who run larger firms whereas individuals with lower levels of education are better off as employees (van Praag & van Stel, 2013).

While education is associated positively to entrepreneurship outcomes in a few studies in the entrepreneurship literature (van Praag et al., 2013), there also exist some other studies concluding on the non-significant or negative effects of education on satisfaction or entrepreneurial activities (Bradley & Roberts, 2004; Carree & Verheul, 2012; Ucbasaran, Westhead, & Wright, 2008; VandenHeuvel & Wooden, 1997). Carree and Verheul (2012) attribute the negative direct effect of education on satisfaction to high opportunity costs; however, education is also argued to indirectly improve satisfaction through higher firm performance. The mixed evidence on the role of education as a general human capital on entrepreneurial well-being suggests the possibility of different roles for education such as joint effects in conjunction with other variables in understanding well-being.

In another study which is the closest to the underlying model of this study, education is found to loose significance on life satisfaction when extrinsic or intrinsic motivation variables are introduced into the model (Salinas-Jiménez et al., 2010). In line with this, Fossen and Büttner (2013) argue that opportunity entrepreneurs gain significantly higher returns to education on entrepreneurial activities than necessity entrepreneurs where opportunity entrepreneurs' return to one year education is similar to benchmark employees' return. Similarly, Baptista et al. (2014) find the positive contribution of both general and specific human capital on the entrepreneur's survival during the first three critical years after startup for opportunity-driven entrepreneurs but not for necessity entrepreneurs. Thus, how education plays a role on entrepreneurial well-being might differ according to what motivates an individual to start a business in other

words whether the individual is employed or not before the startup. All these prior studies shed light on the conceptual model which is developed in the next section.

#### **2.4. The Conceptual Model: Considering the Joint Effects of Education and Income on Well-being for Opportunity versus Necessity-based Entrepreneurs**

Shir (2015) states that entrepreneurship is not simply pursued to make profit that there is a need to explore the payoff structure of entrepreneurial activities. Along the similar lines, Carter (2011) claims that rewards to entrepreneurship evolve over time across the business life cycle. Not all self-employed gain returns to job satisfaction or well-being (Fuchs-Schündeln, 2009). According to Lofstrom (2013), low-skilled workers value wage employment more than self-employment. While the prior literature highlight a positive association between self-employment and various measures of satisfaction or well-being (Andersson, 2008; Binder & Coad, 2013, 2016; Hamilton, 2000), various human capital, individual or venture specific characteristics play a role in this association. Thus, it is difficult to evaluate the job satisfaction of self-employed without human capital, and venture or individual specific characteristics.

Benz and Frey (2008) find that self-employed are more satisfied with their jobs than waged people because they simply do what they like and this in further could be explained using the procedural utility such that individuals not only value the outcomes but also the conditions and processes that result in outcomes. Thus, as an instrumental outcome income's role in job satisfaction or well-being could be questioned. Does income alone result in higher satisfaction and whether this relationship is dependent on other factors or not?

Despite the statistically significant findings between economic variables and happiness, the weakness of such relationships along with the presumption of a strong relationship between the two creates a paradox in the economic literature (Easterlin, 2001). Many studies based on empirical investigations could not find a direct relationship between income and well-being (commonly referred to as happiness, subjective well-being or satisfaction) (Diener & Oishi, 2000; Easterlin, 2001; Stutzer, 2004). Easterlin (2001) links this to the increasing aspirations throughout the life cycle of a person since income brings more happiness; however, the increasing material aspirations undercut the effect of income on happiness. On a similar line, Diener and Oishi (2000) conclude that the increase in income does not necessarily result in an increase in well-being based on national level data highlighting the importance of fulfilled desires in the relation between income and well-being. In another empirical investigation based on a large sample, Rojas (2007) finds a weak relationship between income and happiness suggesting the heterogeneity of the relationship between two which could be explained using the conceptual referent theory of happiness (Veenhoven, 1988).

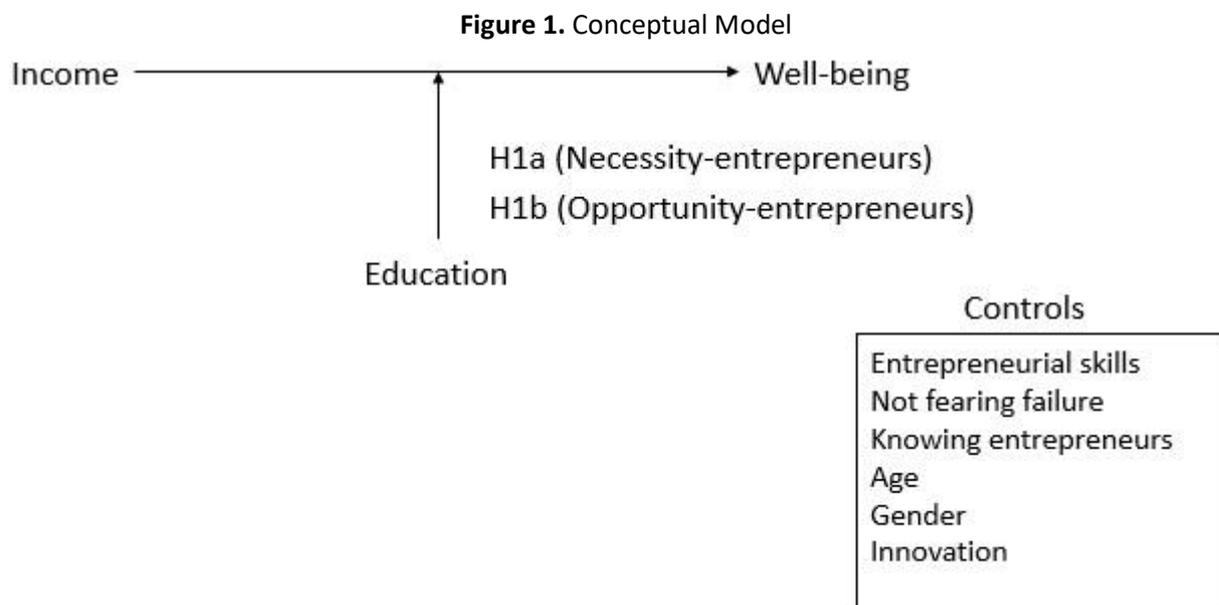
With regards to well-being in entrepreneurial domain, the findings are also not so conclusive. Kautonen and Palmroos (2010) refer to the role of income in the type of necessity entrepreneurship in the sense that a necessity entrepreneur would eventually go back to paid employment in his/her entrepreneurial career unless he/she does not earn a satisfactory income. Salinas-Jiménez et al. (2010)'s study also results in interesting findings on the relationship among income, motivation and life satisfaction. The effects of income on life satisfaction change with the individual's type of motivation such that individuals with extrinsic motivation (e.g., having a safe job) gain a higher satisfaction from income. Besides, on the relation between motivation and life satisfaction Salinas-Jiménez et al. (2010) find that people with intrinsic motivation (e.g., working with people they like or seeking of accomplishment) gain positive life satisfaction only when they come from low and middle income groups.

Thus, income alone is not satisfactory in explaining well-being of self-employed. Salinas-Jiménez et al. (2010) refer to this as "Not all individuals value income in the same way; their own motivations or socio-cultural values can condition their attitudes towards material well-being." While empirical findings could suggest the role of motives in starting a new business in the relation between income and well-being, education as a human capital is another factor which finds a wide place in understanding entrepreneurial well-being in the entrepreneurship literature.

Based on the above discussion, the model given in Figure 1 is conceptualized and the only hypothesis of this study is postulated as follows:

**H1a.** Education moderates the relationship between income and well-being negatively for necessity entrepreneurs.

**H1b.** Education moderates the relationship between income and well-being positively for opportunity entrepreneurs.



### 3. Empirical Analysis

#### 3.1. Data and the Model Variables

Global Entrepreneurship Monitor (GEM) data base is used to test the empirical hypotheses of the conceptual model of this study. GEM collects and analyzes data on entrepreneurial behavior of individuals at national contexts in more than 100 countries across the world for more than 17 years (Amorós & Bosma, 2014). GEM ensures a rigorous approach in sampling design and data collection in the sense that respondents are randomly chosen and the necessary steps are taken to make sure that the samples represent the populations that they belong to (Bosma, 2012). Merging the GEM’s Adult Population Survey (APS) dataset with measures from GEM’s National Expert Survey (NES) in between years 2005 and 2013, a large dataset on entrepreneurs of more than 90 countries is obtained.

The dependent variable of the conceptual model of this study as illustrated in Figure 1 is well-being. GEM’s *Well-being* is measured in terms of one’s satisfaction with life using five items on a five-point scale for each. The scale is adapted from the satisfaction with life scale of Diener et al. (1985) and measures well-being with respect to five items. These items are the measures of one’s own evaluation of life conditions, satisfaction with life, life’s closeness to an ideal life, obtaining important things that are wanted in life, and whether to change anything if one lived the life again.

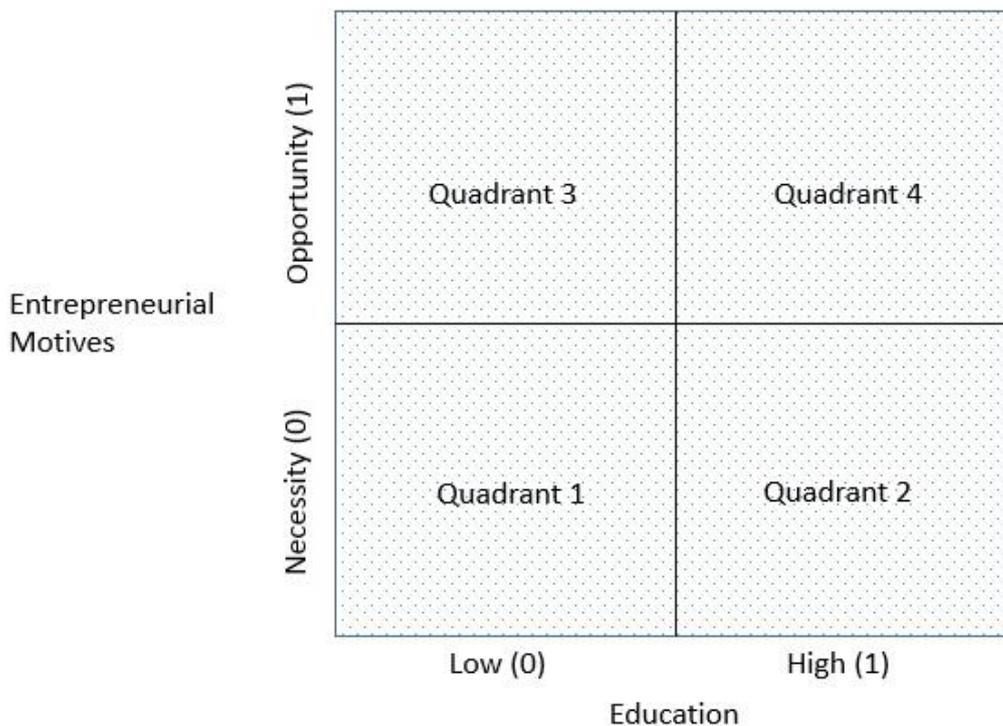
The main independent and moderating variables of the underlying model of this study are income, education and entrepreneurial motives. *Income* represents total annual household income measured across three categories or levels (1, 2, or 3). When all income values are ranked from the smallest to the largest, the first category (1) represents the individuals that have the lowest one third of income. Individuals in third category (3) have the highest one third of income. The second category individuals (2) on the other hand have income in between these two categories. *Education* is measured in terms of number of years (1 to 20)

of education in GEM questionnaires. *Entrepreneurial Motives* on the other hand is measured dichotomously where 0 and 1 represent the necessity-motive and opportunity-motive entrepreneurs, respectively. While opportunity-motive is associated with the motivation of taking advantage of a business opportunity to start a new business, having no better choices for work initiates a necessity-motivated entrepreneur to start a new business. Both motivations are associated with entrepreneurial well-being in the prior literature (Bhola et al., 2006; Binder & Coad, 2013; Carree & Verheul, 2012).

There are other variables that are controlled in this study. As demonstrated in Figure 1, these variables are entrepreneurial skills, innovation, age and gender. One’s own perception of having the required knowledge, skill and experience to start a new business is measured via the so called variable *EntSkill*. *Innovation* is measured as a combination of three items: whether potential customers view this product or service new and unfamiliar, the number of businesses offering same or similar products to the potential customers, the age or newness of technologies required to produce this product or service. *NoFearFail* is coded dichotomously where a value of 1 measures not fearing of failure in starting a business and it is 0 otherwise. *KnowEnt* is the variable that measures whether the entrepreneur knows someone personally who started a business in the last two years or not. Lastly, *Age* is the entrepreneur’s age and *Gender* is coded such that base gender is the female.

In order to better explore the effect of income on entrepreneurial well-being, the main moderating variables of education and entrepreneurial motives are decomposed into four quadrants representing a discrete state of the joint effect both variables. The continuous variable *Education* is first coded into two categories where *LowEdu* corresponds to 12 years or less of education and *HighEdu* represents an education of more than 12 years. The four quadrants of the possible combinations of *Education* and *Entrepreneurial Motives* are given in Figure 2. Necessity-motive entrepreneurs with low level of education are coded as 1 (Quadrant 1) whereas with higher levels of education are coded as 2 (Quadrant 2). Similarly, opportunity-motive entrepreneurs with low and high levels of education are coded into discrete categories of 3 (Quadrant 3) and 4 (Quadrant 4), respectively. The quadrants representing the possible combinations of education and entrepreneurial motives form the basis of the empirical analyses of this study.

**Figure 2.** The four quadrants of *Education* and *Entrepreneurial Motives*



### 3.2. Empirical Analysis

A summary of the model variables in terms of the number of observations, mean, and standard deviation across each quarter is provided in Table 1. The number of observations is the highest in the first quadrant with 925, and is lowest in the second quadrant with 478 observations. The average level of well-being is highest with scores 3.72 and 3.71 in the third and fourth quadrants where the entrepreneurial motives are opportunity-based motives. For necessity-entrepreneurs the mean well-being scores are measured as 3.35 and 3.33 for quadrants 3 and 4, respectively.

**Table 1.** Mean, Standard Deviation and Correlation of Variables Used in the Regression Models with Respect to Four Quadrants

	Mean (Std. Dev.)	Well-Being	EntSkill	KnowEnt	Age	NoFearFail	Gender	Innovation	Income
<b>Quadrant 1 (N=925):</b>									
Well-Being	3.35 (.983*)	1							
EntSkill	.79 (.410)	.077 (.010)	1						
KnowEnt	.47 (.499)	.063 (.028)	.119 (.000)	1					
Age	40.46 (9.819)	.015 (.325)	-.110 (.000)	-.139 (.000)	1				
NoFearFail	.71 (.455)	.143 (.000)	.176 (.000)	-.009 (.395)	-.087 (.004)	1			
Gender	.87 (.337)	.078 (.009)	.010 (.385)	.069 (.018)	.043 (.095)	.053 (.053)	1		
Innovation	1.62 (.428)	.068 (.020)	.060 (.034)	.035 (.142)	-.110 (.000)	.130 (.000)	.036 (.134)	1	
Income	1.84 (.873)	.273 (.000)	.092 (.003)	.101 (.001)	-.018 (.288)	.068 (.020)	.041 (.106)	.000 (.498)	1
<b>Quadrant 2 (N=478):</b>									
Well-Being	3.33 (.937)	1							
EntSkill	.83 (.376)	.101 (.013)	1						
KnowEnt	.56 (.497)	.140 (.001)	.186 (.000)	1					
Age	38.37 (10.148)	-.052 (.126)	-.032 (.243)	-.001 (.494)	1				
NoFearFail	.65 (.476)	.149 (.001)	.176 (.000)	.043 (.174)	-.104 (.012)	1			
Gender	.82 (.388)	-.003 (.476)	-.099 (.015)	-.016 (.363)	.056 (.110)	-.072 (.057)	1		
Innovation	1.58 (.418)	.036 (.216)	-.028 (.268)	-.018 (.346)	-.061 (.090)	.114 (.006)	-.025 (.294)	1	
Income	2.38 (.809)	.228 (.000)	.010 (.411)	.207 (.000)	.091 (.023)	.044 (.167)	-.032 (.239)	-.054 (.121)	1
<b>Quadrant 3 (N=695):</b>									
Well-Being	3.72 (.916)	1							
EntSkill	.86 (.348)	.087 (.011)	1						
KnowEnt	.60 (.490)	.119 (.001)	.142 (.000)	1					
Age	39.19 (9.856)	-.019 (.305)	-.044 (.121)	-.164 (.000)	1				
NoFearFail	.81 (.396)	.138 (.000)	.209 (.000)	.045 (.120)	-.101 (.004)	1			
Gender	.85 (.353)	.036 (.168)	.079 (.018)	-.003 (.465)	.090 (.009)	.045 (.117)	1		

Innovation	1.69 (.419)	.061 (.055)	.048 (.101)	.050 (.095)	-.118 (.001)	.057 (.068)	-.073 (.026)	1	
Income	2.19 (.834)	.134 (.000)	.028 (.232)	.147 (.000)	.008 (.421)	.038 (.161)	.089 (.009)	-.031 (.204)	1
<b>Quadrant 4 (N=770):</b>									
Well-Being	3.71 (.861)	1							
EntSkill	.88 (.326)	.108 (.001)	1						
KnowEnt	.72 (.450)	.042 (.122)	.140 (.000)	1					
Age	37.62 (9.955)	.065 (.035)	.085 (.009)	-.062 (.043)	1				
NoFearFail	.77 (.424)	.045 (.107)	.200 (.000)	.043 (.118)	-.025 (.243)	1			
Gender	.83 (.379)	-.038 (.146)	.051 (.080)	.032 (.186)	-.038 (.149)	.030 (.205)	1		
Innovation	1.71 (.430)	.060 (.047)	.063 (.041)	-.027 (.230)	-.078 (.015)	.068 (.029)	-.045 (.108)	1	
Income	2.62 (.660)	.199 (.000)	.114 (.001)	.052 (.073)	.129 (.000)	.032 (.184)	.043 (.114)	-.004 (.456)	1

\**p*-values are provided in parentheses.

With respect to income, the lowest average level of income is 1.84 and is observed in the first quadrant for necessity-driven entrepreneurs with low levels of education. On the other hand, the highest average level of income is obtained in the fourth quadrant with a score of 2.62 for opportunity entrepreneurs with high levels of education. It is worth to note that while opportunity entrepreneurs have higher income than necessity entrepreneurs on the average, the average income levels of necessity entrepreneurs with high education (Quadrant 2) is greater than the average income levels of opportunity entrepreneurs with low education levels (Quadrant 3). The basic descriptive statistics for the other variables could be found in Table 1. Bivariate correlations among the pairs of model variables are also provided in the same table. The significances of the Pearson correlations in terms of *p*-values are provided in parentheses not indicating a high correlation among the pairs of independent variables.

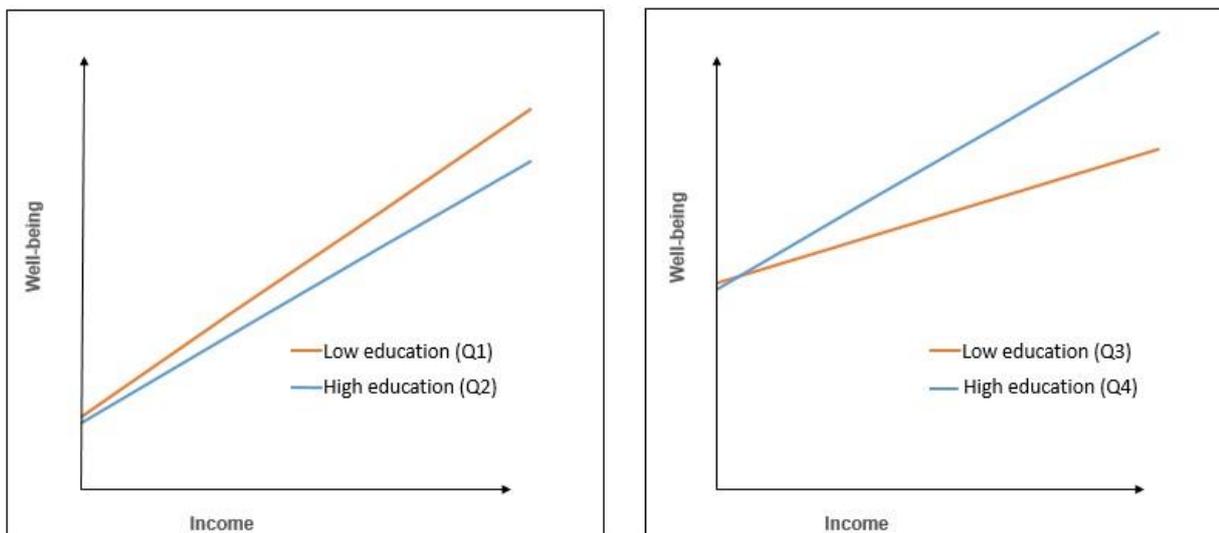
As shown in the conceptual model of Figure 1 and hypothesized before, the influence of income on well-being might differ according to the varying levels of one's education and his or her motives towards starting a business. To test how education interacts with income in the relation between income and well-being, separate multiple regressions are conducted for the four possible combinations of education and entrepreneurial motives. Parameter estimates of the regression analyses along with the associated significance levels measured in *p*-values are provided in Table 2 across each quadrant. The effect of *Income* on *Well-being* is positive and highly significant in all four regressions. However, the magnitude of the effect changes significantly according to which quadrant the regression takes place. To better depict the differences across quadrants, the relation between *Income* and *Well-being* is graphed as shown in Figure 3.

The increase in *Income* results in an increase in *Well-being* for all education levels as well as for both necessity and opportunity entrepreneurs. However, the effect of *Income* on *Well-being* is higher for necessity entrepreneurs with lower education levels than the ones with higher education levels as illustrated in the first graph of Figure 3. When it comes to opportunity entrepreneurs, the effect of *Income* on *Well-being* becomes reversed. Opportunity entrepreneurs with higher education levels achieve higher well-being than the ones with lower education levels with the increasing *Income* as shown in the second graph of Figure 3. Thus, both hypotheses H1a and H1b are supported revealing that education affects the magnitude and the direction of the effect of income on entrepreneurial well-being differently for different entrepreneurial motives.

**Table 2.** Regression Results with Respect to Four Quadrants

Variable	Quadrant 1		Quadrant 2		Quadrant 3		Quadrant 4	
	Unstd. Coefficients	Sig.						
(Constant)	3.347	.000	3.331	.000	3.678	.000	3.614	.000
<i>EntSkill</i>	.071	.357	.163	.156	.112	.271	.196	.043
<i>KnowEnt</i>	.068	.284	.151	.082	.169	.019	.051	.460
<i>Age</i>	.004	.201	-.005	.203	.001	.739	.003	.269
<i>NoFearFail</i>	.246	.000	.231	.010	.273	.002	.043	.554
<i>Gender</i>	.161	.080	.059	.582	.054	.584	-.107	.182
<i>Innovation</i>	.120	.100	.077	.439	.118	.151	.113	.112
<i>Income</i>	.290	.000	.247	.000	.126	.002	.242	.000
<b>R<sup>2</sup></b>	0.099		0.088		0.050		0.055	
<b>Adjusted R<sup>2</sup></b>	0.093		0.074		0.040		0.046	
<b>N</b>	925		478		695		770	

**Figure 3.** The Effect of *Income* on *Well-Being* for (A) Necessity Entrepreneurs, (B) Opportunity Entrepreneurs



*EntSkill* is only found to be significant with a *p*-value of less than 0.05 in the fourth quadrant where opportunity entrepreneurs attain high levels of education. Knowing an entrepreneur who started a business (*KnowEnt*) or not fearing fail (*NoFearFail*) are not found to influence the well-being in any of the four quadrants. While *Age* is also found to be insignificant, *Gender* is only weakly significant in the first quadrant for necessity entrepreneurs with low levels of education. *Innovation* is also found not to influence well-being regardless of the type of entrepreneurial motives nor their education levels.

#### 4. Concluding Remarks

This study seeks to explore whether higher income levels lead to higher well-being of entrepreneurs considering education and entrepreneurial motives as the moderators in this relationship. While entrepreneurial motives in the form of necessity and opportunity entrepreneurship are associated differently with well-being in the prior literature (Bhola et al., 2006; Block & Koellinger, 2009; Kautonen & Palmroos, 2010), the link between education and entrepreneurial well-being or satisfaction is found to be mixed suggesting further roles of education in understanding well-being. Therefore, this study attempts to test the

effect of income on well-being using a large data set covering entrepreneurs from wide geographic regions while treating education and entrepreneurial motives as the moderators along with controlling the related human capital and socio-demographic variables.

The effect of income on entrepreneurial well-being is found not to be same for all levels of education. Besides, this effect is reversed conditioning on the type of entrepreneurial motives. While income has a significant and positive effect on well-being for all levels of education and motives, necessity entrepreneurs with low education levels gain higher returns to income than the ones with higher education levels. On the other hand, opportunity entrepreneurs with high education levels gain higher well-being with increasing income than the ones with lower education levels.

These findings imply the importance of education in attaining higher satisfaction from income particularly for opportunity entrepreneurs. These entrepreneurs voluntarily establish new businesses by leaving their regular employments in order to pursue an opportunity for which they more likely to utilize a higher formal education in these new startups. In describing the characteristics of necessity entrepreneurship at country level, Poschke (2010) use GEM data between 2001 and 2005 and find that educated people tend to be less inclined towards necessity entrepreneurship. Necessity entrepreneurs are also associated with relatively lower levels of satisfaction considering even switching back to regular employment as they find such opportunities further in their entrepreneurial careers (Kautonen & Palmroos, 2010). Thus, the findings of this study could be interpreted within this framework such that necessity entrepreneurs with lower education levels are less likely to find such opportunities as long as they continue to gain satisfactory incomes. These entrepreneurs would be more satisfied with the further increases in their incomes.

This study has also implications for policy makers in promoting entrepreneurship especially considering the growth of self-employment in non-agricultural sectors over the last few decades (Millan, Congregado, & Román, 2010). Poorer countries of OECD such as Greece, Mexico, Turkey and etc. are associated with higher self-employment rates (van Praag & van Stel, 2013). Besides, such countries are typically found to have lower Global Entrepreneurship Development Index (GEDI) scores that are correlated with lower levels of happiness (Naudé, Amorós, & Cristi, 2014). Since developing the right support policies and programs for promoting entrepreneurship is quite important for regional development and innovation, technological startups that are more likely to be established by opportunity entrepreneurs could be supported for more educated potential entrepreneurs.

This study is also not without limitations. In the underlying regression models various socio-demographic factors (i.e., age and gender) and entrepreneurship specific factors such as entrepreneurial skills, knowing an entrepreneur in earlier careers, or not fearing failure are controlled. However, there are other specific human factors such as prior business ownerships or managerial and technical capabilities that are not measured via the underlying data source of this study. There might also be some other factors that are not measured within the GEM dataset of this study that might confound the hypothesized relationships. GEM questionnaires also do not give the industry or firm specifics that could be controlled in the conceptual model of this study. While the entrepreneurial well-being is measured using GEM's conceptualization of subjective well-being in this study, future studies could measure happiness and replicate this study using other measures of well-being such as job satisfaction or work-life balance.

Furthermore, this study is cross-sectional since the dataset is limited to single observations of entrepreneurial characteristics, human capital and well-being over time. A longitudinal data would allow to observe the change in entrepreneurial well-being at individual levels over time and add to our understanding of entrepreneurs' well-being further.

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