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‘Surfeiting, The Appetite May Sicken’: Entrepreneurship and the Happiness of Nations

Wim Naudé[1], José Ernesto Amorós[2] and Oscar Cristi[2]

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1. *Maastricht School of Management, The Netherlands and UNU-WIDER, Helsinki, Finland.*
2. Universidad del Desarrollo, Santiago, Chile.

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Abstract

We know that entrepreneurs – at least those driven by opportunities – can contribute to economic growth, productivity improvements and competitiveness in national economies. But do they contribute to happiness on the country level? In other words, does the happiness of nations depend on its entrepreneurs? And what about happy nations – are they better places for entrepreneurs to start-up new businesses? In this paper we survey the literature on entrepreneurship and happiness, and use various data sources, primarily from the Global Entrepreneurship Monitor, to find tentative evidence of an inverse U-shape relationship between entrepreneurship and national happiness We also find a bi-directional causality between entrepreneurship and happiness on a country level On an individual level however, national happiness is found to have a negative effect on the probability of becoming an entrepreneur. We conclude that entrepreneurship may make nations happier, but as nations become happier, their need and imperative for entrepreneurship seems to decline. Hence, not everybody should become entrepreneurs and the happiness of a nation cannot be –indefinitely increased by increasing the numbers of entrepreneurs.

Key words: Happiness, life and job satisfaction, self-employment, aspirations, development, Global Entrepreneurship Monitor, double-probit estimator.

JEL classification: I31, M13, O50

1. Introduction

Material welfare – as measured in GDP - is but one dimension of a country's development. Promotion of subjective well-being, that is to say how people themselves are satisfied with their lives and their jobs, are increasingly seen as essential objectives of policy. Indicators of 'gross national happiness'[1] are being called on to augment traditional measures of development such as GDP per capita (Angner, 2010). The *Commission on the Measurement of Economic Performance and Social Progress* recommended[2] that 'the time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people's well-being' (Stiglitz et al., 2009). Advances in the measurement of subjective well-being (or 'happiness'), particular to the extent that happiness can now be sensibly compared across countries, has made such an approach eminently feasible (Bolle et al., 2008; Bolle and Kemp, 2008; Blanchflower and Oswald, 2007).

As a result there is a burgeoning literature that attempts to identify what it is that makes countries overall happy - adding to the already substantial literature on what makes individuals happy. Surprisingly, this literature has so far omitted to consider whether and how entrepreneurship may matter for happiness on the country level. We know that entrepreneurs – at least those driven by opportunities – can contribute to economic growth, productivity

[1]After the Kingdom of Bhutan, who introduced the concept of gross national happiness as its overarching development goal (see http://www.grossnationalhappiness.com/)

[2]This Commission, appointed by President Nicholas Sarkozy of France is available at Available at http://www.stiglitz-sen-fitoussi.fr/en/index.htm

improvements and competitiveness in national economies[3] (Van Stel et al. 2005; Wong et al. 2005). But do they contribute to happiness on the country level? In other words, do the happiness of nations depend on its entrepreneurs?

There are many reasons to suppose, *ex ante*, that entrepreneurs can will contribute significantly to national happiness – hence the surprise that the current 'economics of happiness' literature is still silent on the matter. For instance, entrepreneurs create jobs and provide the goods consumed by households, including innovative products that contribute to health and experiential activities (Csíkszentmihályi, 2003). A potentially powerful piece of suggestive evidence comes from comparing countries' position on the Global Entrepreneurship Index (GEINDEX) with their happiness scores as contained in the Gallup 2005 World Poll (GWP). This is done in Figure 1.

--Figure 1 about here--

Figure 1 is dramatic illustration that there *may* be a very strong relationship between entrepreneurship and happiness. Indeed the relationship appears to be non-linear, with countries having a higher score on the GEINDEX seemingly having an increasing level of happiness. If this is indeed the case it would be a very remarkable result, given that most determinants of happiness on a country level, most notably income per capita, show declining

[3]Nyström (2008) concludes from a survey of 38 studies into the relationship between entrepreneurship and economic production that there is generally, at least over the long-run, a positive relationship between entrepreneurship and economic production.

marginal benefits[4]. Without out-of-hand discounting this possibility, there are two reasons to be cautious to accept this inference.

The first is that with happiness scores tending to be quite stable over time, it may be the case here that the causality runs from happiness to entrepreneurship. It is not implausible to think that happy societies may also be very entrepreneurial societies: we know that happiness leads to more successful outcomes over various domains such as marriage, income, work performance and health, due to the positive affect associated with happiness (Lyubomirsky et al., 2005). Oswald et al (2009) finds from a controlled experiment that happiness can raise productivity by up to 12 per cent and Amabile et al (2005) that happiness can improve creativity. One may perhaps expect this effect to also hold over the domain of entrepreneurship.

The second reason to be cautious about interpreting Figure 1 as implying that entrepreneurship leads to a greater happiness amongst nations is that the GEINDEX strictly speaking does not measure entrepreneurship, but rather the 'entrepreneurial economy'. An entrepreneurial economy is one where policy is not aimed at entrepreneurship *per se*, but at the broader conditions which allows for the flourishing of entrepreneurship. The GEINDEX consists of three sub-indexes to capture these conditions – for entrepreneurial attitudes, actions, and aspirations. They capture measures of how free and conducive a society is towards entrepreneurship, how innovative and creative the milieu is, what support, such as finance and

[4]A rigorous result in the economics of happiness literature is that rising per capita incomes contributes positively to individuals and countries' happiness, but after a certain level, found by some to be around US $ 15,000 (Frey and Stutzer, 2002); extra income seems to add very little to overall happiness (Easterlin, 1974; 1995; Layard et al. 2008).

capable human capital, is available, and the like. These factors may not just be associated with entrepreneurship more narrowly defined as the utilization of opportunities through the creation, management and growth of a business firm, but also more broadly with happiness. Existing cross-national studies on happiness have found that countries tend to be happier if there is less unemployment and inflation (Clark and Oswald, 1994; Clark, 2010); better overall health, less inequality (Bolle et al., 2009) and participation and process freedoms, such as living in a democracy and having a say in political matters (Frey and Stutzer, 2002; Hayo and Siefert, 2003; Konow and Earley, 2008; Lelkes, 2002).

Hence to say something about the relationship between entrepreneurship and the happiness of nations we need to focus on entrepreneurship – business ownership and start-up rates – directly, control for and disentangle the effects of good institutions on happiness, and investigate the likely bi-directional causality between entrepreneurship and happiness.

This brings us to the purpose of the present paper, which is to attempt to provide an indication of the separate effect of entrepreneurship, as distinct from an 'entrepreneurial economy', on national happiness levels, and to evaluate the impact of a happy environment on entrepreneurship in turn. We do this by first clarifying our key concepts in section 2 and dissecting the extant literature on the relationship between entrepreneurship and happiness in section 3. Then, in section 4 we set forth our hypotheses, explain our methodology. Our results are discussed in section 5. Section 6 concludes.

2. Concepts and Definitions

An entrepreneur can be defined as a person who is a self-employed business owner (e.g. Van der Loos et al., 2010). The entrepreneur's 'job' is to conceptualize, start-up, own and manage a business firm with the aim of utilizing some perceived opportunity [5](Gries and Naudé, 2010).

For purposes of this paper we see happiness as synonymous with subjective wellbeing (SWB) and defines happiness as 'the degree to which an individual judges the overall quality of his or her life as favorable' (Blanchflower and Oswald, 2004:1360). Strictly speaking however, SWB encompass both short-term affects (emotions) as well as a more overall cognitive assessment of one's life, i.e. life satisfaction (Howell and Howell, 2008). We will use data on *life satisfaction* scores across countries as our measure of happiness. This measure has been subjected to empirical testing and validation quite often and is widely seen now as a reliable measure of personal utility.

Life satisfaction can be measured using both single-item and multiple-item measures[6]. Single-item measures consist of asking people some of the following questions[7]:

> *'All things considered, how satisfied are you with your life as a whole these days?'*
>
> *Now taking everything about your life into account, how satisfied or dissatisfied*
>
> *are you with your life today?"*

[5]These elements are common to most definitions of entrepreneurship used in economics (e.g. Shane and Ventakaraman, 2000; Casson, 2006).

[6]seeDiener et al.'s (1985) *Satisfaction with Life Scale* (SWLS).

[7] As Di Tella and MacCulloch (2008) point out, the term 'life satisfaction' is used in these surveys instead of 'happiness ' as the latter cannot always be translated precisely in all languages.

Now, let's talk about your life as a whole. All things considered, how satisfied or dissatisfied are you with your life as a whole these days?

ll things considered, how satisfied or dissatisfied are you with your life as a whole these days? Choose a point on this scale, where point '0' signifies that you are not at all satisfied and point '10' that you are completely satisfied with the life you lead."

Taking all things together, how satisfied are you with your life these days? Please answer with the help of this scale. For instance, when you are totally satisfied with your life, please tick '10'. When you are totally unsatisfied with your life, please tick '0'. You may use all values in between to indicate that you are neither totally satisfied nor totally unsatisfied."

Generally, respondents have to given an answer between 1 (for dissatisfied) and 10 (for satisfied).

Major surveys reporting on life satisfaction from various countries include the World Values Survey (WVS), the Gallup World Poll (GWP), the Eurobarometer Surveys, the German Socio-Economic Panel (GSEP), and others. In this paper we will be drawing largely on happiness data from the WVS and GWP as these cover the countries for which we have data on entrepreneurship from the Global Entrepreneurship Monitor (GEM).

Based on single-measures of life satisfaction, there is quite a variation of happiness across individuals and countries. As we are primarily interested in the latter, and for the sample covered by the GEM, we can mention that in the GEM sample (which by 2009 had covered 65 countries) happiness scores ranged from around 4.3 for Angola to over 8.4 for Denmark. Table A1 in the Appendix contains happiness scores for the GEM sample taken from the World Gallup Poll (2005) and the World Database on Happiness (2000-2008 average score).

3. Literature Review

As we mentioned at the outset, despite the growth in cross-country happiness studies the potential contribution of entrepreneurship has so far, to the best of our knowledge, been omitted. Our paper is an attempt to rectify this gap.

Despite this gap, it is quite possible from the existing 'economics of happiness' and related literatures to derive some useful conclusions about the relationship between entrepreneurship and happiness on the national level. As we will show here, from a brief overview of this literature, entrepreneurship may generally be positive for national happiness, and not just through raising incomes and wealth. However, this statement needs to be qualified. The type of

entrepreneurship matter, and the extent or prevalence of entrepreneurship also matter: national happiness cannot be maximized by turning everyone into an entrepreneur.

So why would entrepreneurship, as defined, matter for national happiness?

The first is, as we already mentioned in the introduction, that entrepreneurs create jobs and provide the goods consumed by households, including innovative products that contribute to health and experiential activities (Csíkszentmihályi, 2003). We know that unemployment is a major and significant cause of unhappiness (Clark and Oswald, 1994; Clark, 2010) - thus by providing jobs entrepreneurs contribute importantly to raising happiness (or at least prevent happiness from declining). We also know that good health and having experiential activities[8] raise happiness levels (Bolle et al., 2009). To the extent that entrepreneurs improve productivity and raise economic output, they would also contribute to incomes and wealth that also, up to a point, raise happiness significantly.

Moreover entrepreneurs, by exercising the choice to become entrepreneurial, are in themselves happier if they can do so rather than otherwise. With between 10 and 30 per cent of a country's labour force typically business owners, having a group with higher happiness can significantly raise aggregate happiness scores. Moreover, aggregate happiness can also

[8] Evidence suggests that 'experiential' purchases, like a holiday trip, make people happier than material purchases (Van Boven, 2005).

indirectly be raised through the finding that happiness is interdependent[9] (Bolle et al., 2009): entrepreneurs' happiness can rub off on the happiness of non-entrepreneurs.

There is now a robust body of evidence that entrepreneurs do indeed experience higher levels of job satisfaction than employees[10] (Anderssen, 2008; Benz and Frey, 2008; Blanchflower, 2004; Frey and Benz, 2002; Lange, 2009; Parker and Ajayi-Obe, 2003). The circumstantial evidence is strongly suggesting that they enjoy higher life satisfaction as well. Not only does job satisfaction contribute substantially to life satisfaction (after all, it is the way in which most of our lives are spent) but entrepreneurs have also been found to be healthier, less prone to negative feelings and depression, and to experience flow, than employees (Bradley and Roberts, 2004; Ceja, 2009; Graham et al., 2004;Patzelt and Shepherd, 2009).

But entrepreneurs may also have a negative impact on national happiness. An obvious case would be 'destructive' or 'non-productive' entrepreneurs (Baumol, 1990) who engage in rent-seeking, corruption, organized and 'white-collar' crime and tax evasion. We are however not concerned with these types or allocation of entrepreneurship, as their negative impact on society is unambiguous and uncontroversial. What is more complex and ambiguous, is why and how materially productive entrepreneurship, as defined here, can detract from a nation's overall happiness.

[9]Consistent with this is evidence from Stutzer and Frey (2010) showing high unemployment rates in a country depresses the happiness of people who are not themselves unemployed.

[10]Why are entrepreneurs generally happier than employees on the job? Empirical evidence suggests that this is because they value the independence and lifestyle flexibility of running their own business (Benz and Frey, 2004; Lange 2009; Moskowitz and Vissing-Jorgensen, 2002; Taylor, 1996). Furthermore they experience 'procedural utility', that is the *process* of being an entrepreneur provides enjoyment over and above the material success of being so (Block and Koellinger, 2009).

A first possible instance could be when most entrepreneurs are not so by choice, but by necessity. The GEM measures 'necessity-driven' entrepreneurship by including the question '*Are you involved in this start-up [this firm] to take advantage of a business opportunity or because you have no better choices of work?*' When people turn to entrepreneurship (self-employment) by necessity, they essentially lose their 'agency' or free will as far as their employment is concerned, and this is experienced as a loss of subjective well-being (Gries and Naudé, 2010). Many people would indeed be happier as employees in a hierarchical organizational set-up rather than being an independent entrepreneur. Fuchs-Schündeln (2009) for instance points out that not everybody attaches the same utility to the greater freedom, choice and responsibility that entrepreneurs tend to derive from their job and that 'Taking decisions independently, immediately feeling the consequences of one's actions, or receiving feedback from a superior might be perceived as positive job attributes by some, and as negative ones by others.' (Ibid, p.162).

Consequently not everybody should become entrepreneurs. If more people become entrepreneurs than for whom it results in higher job satisfaction, then we may infer that overall national happiness may be lowered. We can find some tentative evidence in support of the notion that with more people becoming entrepreneurs there will be more entrepreneurs in the population who report lower overall job satisfaction from EU data. In Figure 2 we plot the relationship between entrepreneurs' average job satisfaction scores from a sample of EU countries and the extent of entrepreneurship as measured by the business ownership rate.

--Figure 2 about here--

Figure 2 shows that there appears to be a robust negative relationship between the business ownership rate and entrepreneurs' average job satisfaction across nations. In countries such as Denmark, where entrepreneurs report high job satisfaction scores in excess of 8 (out of 10), the business ownership rate is relative low: people without the propensity to enjoy the independent style of living of an entrepreneur just do not choose to become entrepreneurs. Elsewhere however, people may not have the same choices, so that a larger proportion of the pool of entrepreneurs is not there by choice. We may expect that their loss of happiness translate on the national level into reduced happiness.

There is also a second way in which materially productive entrepreneurship may detract from national happiness. This may be the case when there is, perhaps paradoxically, too many rather than too few, opportunity-driven entrepreneurs in a country or region. This reason for this may be found in the fact that growing opportunity entrepreneurship may be associated with rising levels of aspirations in a country.

In the 'economics of happiness literature', as well as in psychology, it is a well-established phenomenon that with increasing material wealth (or opportunities) people's aspirations increases. To the extent that their actual goals or performance fall short of these, their happiness will decrease. At certain levels of opportunity entrepreneurship and accompanying higher income and wealth levels, happiness may stagnate or even decline when entrepreneurs, and their societies', material aspirations start to rise to such an extent that for most people their high aspirations will outstrip their achievements. This will lead to a feeling of

dissatisfaction and frustration – they become 'frustrated achievers' despite their success (Cooper and Artz, 1995; Stutzer, 2004; Stutzer and Frey, 2010).

In fact, at high levels of opportunity entrepreneurship it may in fact be persons with high and growing aspiration levels that self-select into entrepreneurship. With many opportunity entrepreneurs around competition will increase- specifically competition to fulfill rising aspirations. In such a socially competitive environment, following Hill and Buss (2008:64-65) the 'negative' emotion of envy (or fear) could be very helpful in motivating and focusing the entrepreneur – making him or her more 'competitive' – although this could come at the accompanying price of experiencing negative subjective well-being. As Hill and Buss (2008:65) put it 'individuals who experience envy in response to a social competitors' advantage would be appropriately alerted to the advantage and motivated to commence corrective action'. More competitive-minded entrepreneurs may therefore experience more negative states of mind that others and report lower levels of happiness. Higher levels of opportunity entrepreneurship may make this more likely. Many negative spill-over effects could result. For instance in highly competitive and materialistic societies with high aspirations we see 'family solidarity and community integration' (Lane, 2000) breaking down. Diminishing social and family relationships – relational goods – is a well-recognized cause of reduced happiness across countries and individuals.

Third, productive entrepreneurs may also lower overall national happiness when successful opportunity entrepreneurship result in greater income and wealth inequalities in a country. Such inequalities are strongly associated in the literature with lowers overall happiness (Bolle et

al., 2009). This is referred to in the literature as 'reference- groups effects', because what matters for happiness often is not a person's absolute income or status, but income or status in reference to some comparison group – i.e. 'keeping up with the Joneses'. If all incomes rise, and one's relative position remain the same, it is not expected to influence one's happiness; however if one's relative position decline, in spite of higher absolute income, one may experience a decline in happiness (Howell and Howell, 2008). An entrepreneur may perceive his or hers status in society to depend on the extent of (even excessive) consumption of 'positional' goods, i.e. goods that indicates relative status and whose value depend on being exclusive (Dean, 2007; Sarracino, 2010). With more opportunity entrepreneurs one may observe more income and wealth inequalities and more variability in entrepreneurial performance. Some may be very successful 'superstars'. As the relatively less successful becomes aware of the formers' greater success they may shift –unrealistically- their happiness reference group to that of the more successful entrepreneurs. 'We need only to turn on our televisions or gaze up at a billboard to be exposed to people who are, literally, the richest and most attractive in the world (Hill and Buss, 2008:68). Graham (2005.47) posits that as a result of information technologies and globalization 'aspirations may be driven by new global reference norms, while opportunities are constrained by local conditions'.

Finally, the state of a nation's happiness may have an impact on its entrepreneurship. In the introduction we mentioned that it is not unreasonable to associate happy societies with entrepreneurial societies. Happiness has been found to be a causal factor of success in various domains, including work performance, productivity and creativity, all domains pertinent to entrepreneurship (Amabile et al, 2005; Lyubomirsky et al., 2005; Mohanty, 2009, Oswald et al.,

2009). The positive affect associated with happiness may crucially contribute to different ways of thinking – allowing more creativity and optimism (Seligman, 2002) –that are associated with entrepreneurship. However, as far as we are aware there does not exist much research on whether the overall state of a nation's happiness significantly spurs on entrepreneurship. Further empirical research is needed.

To conclude this section, we have argued that having more and better entrepreneurs in a country will add to its national happiness through both the functioning of entrepreneurs, and the fact that entrepreneurs are often happier than employees. However we have also argued that necessity entrepreneurship, rising aspirations and reference group effects, and growing income and wealth inequalities are three sets of reasons why one may observe the apparent paradox of greater material entrepreneurial and economic success, that entrepreneurs and their country's overall happiness do not increase similarly, and in fact decline. Whether more happy nations will inspire more entrepreneurs, particularly opportunity-driven and high-impact forms of entrepreneurship, was considered to be likely, although directly confirming empirical evidence still seems to be lacking to make a final judgment.

In the remainder of the paper we explore the empirical evidence for these conclusions.

4. Methodology

4.1 Hypotheses

From the problem statement in section 1 and the literature review in section 3, we wish to set forth the following three hypotheses:

H1. An increase in entrepreneurship is associated with an increase in national happiness and this effect is stronger if entrepreneurship is predominantly opportunity driven.

H2. The relationship between entrepreneurship and national level happiness is an inverted U-shape: up to a certain level an increase in entrepreneurship will be associated with an increase in national level happiness, after which it would be associated with a declining level of happiness.

H3. There is a bi-directional causality between national happiness and entrepreneurship; in particular happier countries will have a higher likelihood of having opportunity-driven and expected high-growth entrepreneurship.

Hypothesis H1 follows from our discussion of Figure 2 in the previous section, where it was deduced that entrepreneurs are generally happier (higher job satisfaction) than employees but only if people can make the choice whether or not to become entrepreneurs.

Hypothesis H2 follows from the conclusion in the previous section that there are both reasons to suspect opportunity entrepreneurship to contribute to happiness and to detract from happiness, and that the detraction effects, which comes through rising aspirations and inequalities (reference effects), may only apply at high levels of opportunity entrepreneurship. Thus, we basically expect the relationship between opportunity entrepreneurship and happiness to be initially positive, with a decreasing marginal happiness from opportunity entrepreneurship, to the extent that after a certain level happiness may even start to decline.

Hypothesis H3 follows from the plausible conclusion in section 2 that happier countries may be associated with the free, creative and encouraging environment for entrepreneurial flourishing.

4.2 Estimating Equations

To test our hypotheses we will run a number of regression equations. Hypotheses H1 and H2 will be tested estimating the following standard type of 'happiness equation' (see for instance Di Tella and MacCulloch, 2008; Blanchflower and Oswald, 2004; Rehdanz and Maddison, 2003; Sarracino, 2010) with measures of entrepreneurship included on the right hand side:

$$H_{it} = \alpha + \beta E_i' + \boldsymbol{C_{it}}'\delta + u_{it} \qquad (1)$$

Where H_{it} is our measure of happiness (life satisfaction) for country i at time t. E_{it} is our measures of entrepreneurship in country i at time t, and $\boldsymbol{C_{it}}$ is a vector of control variables. E will enter in quadratic form. We expect $\beta>0$ for E and $\beta<0$ for E^2, to capture the inverted U-shape hypothesized to exist between entrepreneurship and happiness. Among the control variables we include the variable *ExOPP/NEC*, which is the product between entrepreneurship and the ratio between opportunity entrepreneurship and necessity based entrepreneurship. We expect a positive sign for the parameter that accompanies that composed variable as a result of an expected greater (lesser) effect of entrepreneurship on happiness as higher (lesser) is the relative weight of opportunity (necessity) entrepreneurship.

We will use 3SLS estimator for (1) to account for the expected causality between entrepreneurship and happiness. Thus we propose a model composed for two equations, one

for each one of these variables[11]. The unknown parameters of this system of simultaneous equations are estimated using three stage least squares (3SLS). In the first stage, it performs two-stage least-squares (2SLS), where each endogenous covariate in the equation of interest is regressed on all of the exogenous variables in the model, including both exogenous covariates in the equation of interest and the excluded instruments. The predicted values from these regressions are obtained. In the second stage, the regression of interest is estimated as usual, except that in this stage each endogenous covariate is replaced with the predicted values from its first stage model from the first stage. On the third stage, the error terms of the second stage are used to construct the variance-covariance matrix of the residuals allowing for contemporaneous correlation among the error terms of the equations, and use it to perform feasible generalized least squares in each equation. The 3SLS provide more efficient estimators than 2SLS provided the system is over identified. We will use a pooled 3SLS estimator since unfortunately insufficient data does not permit panel data estimation.

In hypothesis H3 we are interested in the impact of a country-level variables (happiness) on an individual decision to (i) enter into entrepreneurship and (ii) be a high-impact entrepreneur. The latter is defined here as an entrepreneur who expects to create at least 20 new jobs within five years. The dependent variables are therefore discrete variables: in the case of (i) the dependent variable (E)= 1 if a person enters early stage entrepreneurship and = 0 if a person decides not to, as well as = 1 if a person enters early stage entrepreneurship to pursue an opportunity (opportunity-driven entrepreneurship) and 0 if a person decide not to enter

[11]For the variable E^2, .the squared value of happiness and the variable ExOPP/NEC, we use a three more equations in which these variables are a function of all the exogenous covariates, their squared values, and their cross products.

entrepreneurship. In the case of (ii) the dependent variable (HIE) = 1 if the entrepreneur is an expected high-growth impact entrepreneur and = 0 if not.

Given that the dependent variables are in both cases discrete variables and that the two cases are not independent, we will use a Double Probit (or biprobit) sample selection estimator to test H3. Use of sample selection estimators such as the Double Probit is advised since there are a large number of adults surveyed in the GEM that did not choose to become entrepreneurs. The cases where they did not choose to enter entrepreneurship in the first place may not be random but due to some particular individual features - so that using an OLS estimator could lead to biased estimates. In essence, high-performance outcomes are observed only for individuals that selected to be entrepreneurs. If the factors that determine the choice to be an entrepreneur or not are different from those that determine the impact of entrepreneurship, not taking the selection into account is tantamount to having the model subject to an omitted variable bias (Heckman, 1979).

4.3 Variables and Data

In the cases of hypotheses H1 and H2 our dependent variable is the *life satisfaction scores* of the countries in the GEM sample. The main global surveys of happiness are the *World Values Survey* and the *Gallup World Poll*. These however do not report survey results for every year that GEM data is available. For the countries in the GEM we use life satisfaction scores for years 2006 up to 2008 from the World Database Happiness Survey questions to collect hose scores change from one country to another and also from one year to another within a same country. These surveys questionnaire the ones indicate previously in this paper. In spite of those

changes we judge that the questions and so on the scores are comparable. Some countries use two or also three of those question surveys in a same year and for this case we use a simple average of the scores. The selection of control variables were influenced by the literature survey contained in section 2. Thus we included as control variables institutional quality in a country, GDP per capita, income inequality and health and education levels. Data on control variables were obtained from several sources; economic freedom reported by the Index of Economic Freedom of The Wall Street Journal and The Heritage Foundation. In the case of H3, we used the individual level data from the GEM survey in 2005, which covers over 117,833 individuals in 35 countries[12]. We chose 2005 as it corresponds to the 2005 Gallup World Poll life satisfaction score obtained by a country, and hence we could relate entrepreneurship decisions in 2005 to the reported happiness of a country in that year. We also included in the probit-probit regressions a number of control variables. These were selected based on generally recognized determinants of entrepreneurial start-ups, including the entrepreneurs' personal characteristics, industry, and institutional determinants. The data was sourced from the GEM as well as the World Bank.

Table 1 summarizes the variables and sources of data used for the pooled and 3SLS regressions, and Table 2 for the double-probit model estimates.

[12]The countries surveyed were Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Jamaica, Japan, Latvia, Mexico, Netherlands, New Zealand, Norway, Singapore, Slovenia, Spain, South Africa, Sweden, Switzerland, Thailand, Venezuela, United Kingdom, United States.

--Table 1 and 2 about here--

5 Regression Results

5.1. Pooled 3SLS Results

Our results for the equation of happiness indicate that the country´s entrepreneurial activity contributes positively to its Life Satisfaction scores. Moreover, the positive sign for the parameter that accompanies the variable *TEAxOPP/NEC* has as positive sign. The latter indicates that the positive effect of entrepreneurial activity upon Life Satisfaction is greater as higher is the ratio between opportunity and necessity. These results provide evidence for Hypothesis 1.

--Table 3 about here--

Results also indicates that an inverse U shape relationship describe the effect of GDP per capita upon Life Satisfaction. This is consistent with theory about the marginal utility of income that states that at some income level the marginal utility decreases with income. As expected the income aspiration proxy has a negative effect upon happiness. This implies that a more unequal income distribution reduces national happiness and that that effect is greater as higher is the GDP per capita. The measures for life index and education index are not statically significant.

Results for the equation of entrepreneurship indicate that all the variables are statistically significant but economic freedom. An interested result is that the effect of Life Satisfaction

upon entrepreneurship is described by an inverted U. Our interpretation of the inverse U-shape relationship between entrepreneurship and Life Satisfaction is that happier people are more prompt to start a new business, but as nations become happier; their need and imperative for entrepreneurship and opportunity entrepreneurship seems to decline. Perhaps relational goods, as was discussed in the literature survey, become more important. This also extends the findings of Lyubomirsky et al (2005) an Oswald et al (2009) about happiness to the domain of entrepreneurship.

Finally, our results for that equation states that the relationship between GDP per capita and entrepreneurial activity is described by a U curve. This results is consistent with an extended literature that states that as the Gross National Income per capita increases the entrepreneurial activity decreases until some level of the Gross National Income at which the former star rising due to an increase of the opportunity driven entrepreneurship rate (Carre et al., 2003; Wennekers et al 2005; Acs and Amorós 2008; Amorós and Cristi, 2008) This pattern could related with the entrepreneurship rates in countries with relative low levels of per capita income that are characterized by the prevalence of many very small businesses or self-employment. As per capita income increases, industrialization and economies of scale allow larger and established firms to satisfy the increasing demand of growing markets and to increase their relative role in the economy. The increase in the role of large firms may be accompanied by a reduction in the number of new firms or of self-employment, as a growing number of people find stable employment in large firm. With high GDP per capita, the role played by the entrepreneurial sector may increase, as more individuals can access the

resources to go into new business for themselves in knowledge-intensive environments with more business opportunities (Bosma and Levie 2010).

5.2 Double Probit Results

The double probit regression results are contained in Table 4. To facilitate model identification, the two stages (outcome and selection) should have at least one variable different. In the present case we achieve this by considering start-up costs, opportunity perception, personal knowledge of another entrepreneur and credit availability as determinants that are more relevant for the selection (starting) stage than for high-growth expectations.

---Table 4 about here--

The diagnostic results contained in Table 4 indicate that ρ, the correlation coefficient between the various equations' error terms are statistically significant, meaning that use of a double probit model (as against estimating each equation separately using probit) is advised. It can be seen in the table that happiness has negative and statistically significant impact on early-stage entrepreneurial decisions in our sample. It means that in happier nations the probability of new early stage entrepreneurial activity is less than in less happy nations. Similarly, early-stage entrepreneurs in happier nations tend to have somewhat more reduced expectations of the growth of their firms. It can be seen that when choosing whether to be an opportunity-entrepreneur or not, that the effect negative effect is less strong than for all types of entrepreneurship. Conversely, once a person has chosen to become an opportunity entrepreneur, happiness will have a more substantial effect in dampening his or her growth expectations. Our interpretation of this is that in happier nations there may be less need to

work, and less unemployment, so that growing a firm in terms of employment may be more difficult – the marginal effort is much higher. Based on these results we have to reject hypothesis H3. Opportunity entrepreneurship may make nations happier (as found in section 5.1) but as nations become happier, their need and imperative for opportunity entrepreneurship seems to decline, and less people become opportunity entrepreneurs. If not, the results form section 5.1 would suggest, surfeit of entrepreneurship would contribute towards reducing overall happiness.

Finally, as far as the control variables are concerned, Table 4show that these generally have the expected sign and most are significant. Thus start-up costs discourage total early-stage activity (except if it is opportunity-driven). Education and entrepreneurial abilities contribute positively to the probability of start-up and growth expectations. Networks, and the cultural views or acceptability of entrepreneurship in a particular nation is positively related to the probability of early-stage entrepreneurial activity. Women are less likely than men to become entrepreneurial or hold high-growth expectations, and younger people are more likely to enter entrepreneurship.

6 Concluding Remarks

There are growing calls globally for broader and more non-material and subjective measures of human-wellbeing to guide policy, rather than a narrow focus on GDP per capita. Our conclusion, based on the findings of this paper, is that a better understanding of entrepreneurship and its relationship with non-material and subjective indicators of human wellbeing is important in this regard.

We started out this paper by noting that the relationship between entrepreneurship and national happiness has however been neglected in the literature, despite the fact that a sizeable proportion of any country's population consists of entrepreneurs (who are often happier than employed workers) and that entrepreneurship contribute importantly to creation of jobs, consumer goods and incomes and wealth – all inputs, up to a point, to national happiness. Recently Gries and Naudé (2010; 2011) provided fresh theoretical models to illustrate that entrepreneurship can matter for individual and societal development, beyond mere increases in GDP per capita.

From a survey of the literature we posited that (i) *An increase in entrepreneurship is associated with an increase in national happiness and this effect is more pronounced with a higher e prevalence of opportunity driven entrepreneurship* (*H1*); that (ii)*The relationship between entrepreneurship and national level happiness is an inverted U-shape: up to a certain level an increase in entrepreneurship will be associated with an increase in national level happiness, after which it would be associated with a declining level of happiness* and (iii) that there is bi-directional causality between national happiness and opportunity-driven entrepreneurship; in particular happier countries will have a higher likelihood of having opportunity-driven and expected high-growth entrepreneurship (*H3*).

Using as our primary source data on early stage entrepreneurial activity from the various Global Entrepreneurship Monitor (GEM) surveys, we found support for hypotheses *H1* and *H2.* Regarding, H3 we have found evidence that suggest that happiness affect the level of the entrepreneurial rate. Using individual data we provide evidence that happiness has negative

impact on early-stage entrepreneurial decisions in our sample. It means that in happier nations the probability of new early stage entrepreneurial activity is less than in less happy nations. Thus H3 is rejected. Nevertheless, in terms of the composition of the early stage entrepreneurial activity, using country level data we show that in happier countries the ratio between opportunity driven entrepreneurship over necessity driven entrepreneurship is higher than in those countries with lower measures of happiness.

Our interpretation of the inverse U-shape relationship between entrepreneurship and national happiness and the negative impact of national happiness on the probability of becoming an opportunity entrepreneur is that entrepreneurship may make nations happier but as nations become happier, their need and imperative for entrepreneurship and opportunity entrepreneurship seems to decline. Perhaps relational goods, as was discussed in the literature survey, become more important. Consequently, given the time and effort that opportunity entrepreneurship, particularly if it needs to create many jobs, takes, marginally fewer people will become opportunity entrepreneurs. Otherwise, the results of this paper suggest that the surfeit of entrepreneurship would contribute towards reducing overall happiness. It is very much as Shakespeare (in Twelfth Night) put it in another context: '*If music be the food of love, play on; Give me excess of it, that, surfeiting, The appetite may sicken, and so die'*.

While intriguing, supported by the available evidence, and consistent with the existing literature – and the growing 'economics of happiness' literature – we have to caution that our results may however still be tentative. Data availability is still a significant obstacle. Our sample was restricted only to 36 countries, generally countries with moderate to high happiness and

GDP levels. We did not have individual happiness data on the individuals included in the GEM sample. Perhaps a useful extension to the GEM survey in future would be to include a simple question on life satisfaction in the question.

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Appendix:

Table A1: Happiness Across Nations Included in the GEM Sample

Economy	Rate of Entrepreneurship	Rate of Opportunity Entrepreneurship	Rate of Necessity Entrepreneurship	Average happiness 2000-2008	Happiness 2005
Angola	22.7	10.6	8.0	4.3	
Argentina	12.9	8.4	4.7	7.1	7.1
Australia	12.4	10.6	2.2	7.7	7.6
Austria	3.9	3.1	0.5	7.8	7.2
Belgium	3.2	2.9	0.3	7.4	7.4
Bolivia	29.8	21.0	8.6	6.5	
Bosnia and Herze	9.0	5.0	3.9		
Brazil	13.2	7.1	5.6	7.6	7.6
Canada	8.5	7.1	1.5	8.0	7.3
Chile	13.2	8.9	4.0	6.3	6.3
China	13.1	6.7	6.6		6.7
Colombia	23.2	13.4	9.4	7.3	
Croatia	5.6	3.3	2.1		6.4
Czech Republic	7.9	5.5	2.4	6.6	
Denmark	5.8	5.3	0.3	8.4	8.1
Dominican Repub	18.6	12.8	5.6	7.6	
Ecuador	22.2	15.2	6.7	6.4	
Egypt	13.1	10.5	2.4	6.3	
Finland	5.9	5.5	0.6	7.9	8.0
France	4.5	3.2	1.1	6.5	7.1
Germany	5.2	3.7	1.4	7.0	7.2
Greece	7.1	5.2	1.4	6.5	6.5
Hong Kong	5.0	3.5	1.3		
Hungary	6.3	4.4	1.8	5.5	5.7
Iceland	11.5	9.7	0.8	8.2	8.3
India	10.9	7.1	4.2	5.5	
Indonesia	19.3	16.7	2.6	5.7	
Iran	9.2	5.9	2.9	5.6	
Ireland	7.3	7.1	1.3	7.8	7.6
Israel	6.0	3.7	1.1	7.0	
Italy	5.5	3.8	0.7	6.9	6.9
Jamaica	17.7	10.3	6.6		6.7
Japan	3.0	2.2	0.8	6.8	6.8
Jordan	18.3	14.5	2.6	5.8	
Kazakhstan	9.4	6.6	2.6	6.1	
Korea	13.3	7.5	4.6		
Latvia	6.1	4.8	1.0	5.4	5.4
Macedonia	14.5	7.2	6.8		
Malaysia	11.1	10.1	0.5	6.6	
Mexico	11.5	7.7	2.7	7.7	7.7
Netherlands	5.0	4.2	0.5	7.7	7.7
New Zeland	15.1	13.3	2.0	7.4	7.7
Norway	8.2	7.1	0.5	7.8	7.7
Peru	33.0	22.8	10.0	5.9	
Philippines	20.4	11.1	9.3	5.5	
Poland	7.3	4.4	2.8	6.3	
Portugal	6.6	5.3	1.1	5.7	
Puerto Rico	3.1	2.4	0.5		
Romania	4.0	2.4	1.0	5.9	
Russia	4.3	3.1	0.9	5.5	
Serbia	8.1	4.4	3.2		
Singapore	5.1	4.8	0.9	6.9	7.1
Slovenia	4.4	3.6	0.8	6.8	7.0
South Africa	6.3	3.9	2.0	5.7	5.0
Spain	5.8	4.7	1.3	7.2	7.6
Sweden	4.1	3.5	0.6	7.9	7.9
Switzerland	6.7	5.6	0.9	8.0	8.1
Taiwan	4.3	3.3	0.7		
Thailand	20.4	14.3	5.2	6.3	6.3
Turkey	5.9	3.4	2.0	5.1	
Uganda	30.5	16.8	13.8	4.5	
United Arab Emir	6.1	4.8	0.8		
United Kingdom	5.9	4.7	0.9	7.1	
United States	11.5	9.2	1.4	7.9	7.9
Uruguay	12.2	7.9	3.7	6.8	
Venezuela	24.2	15.0	9.2		6.9

***Table A2: Summary of Variables Used in the** Pooled 3SLS Estimation*

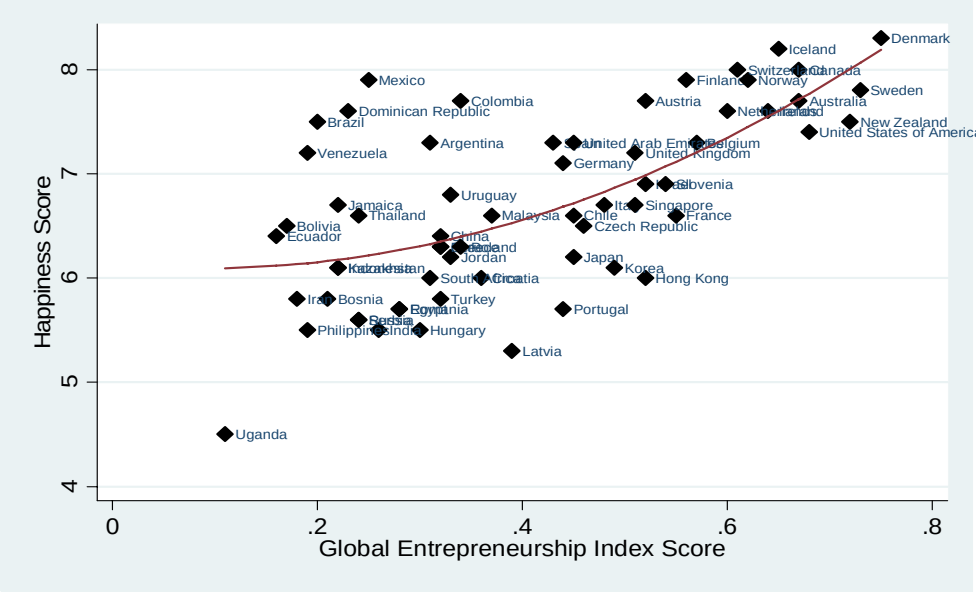
Variable	Observations	Mean	Standar deviation	Max	Min
life index	381	0.86	0.09	0.96	0.37
education index	372	0.94	0.06	0.99	0.57
Income Gini	301	32.96	9.08	62.83	22.00
Early stage entrepreneurial activity	426	8.40	5.62	40.34	1.25
Economic Freedom	423	67.36	8.76	90.60	44.01
Life Satisfaction	147	7.07	0.83	8.48	4.27
Ratio between opp and nec	370	5.54	5.15	37.00	0.51
Gross Domestic Product per capita PPP ($US year 2008)	425	23438.33	10993.73	55198.98	809.33
Income aspiration	301	762024.60	307612.96	1937123.50	94330.91

Table A3: Summary of Variables Used in Double Probit Estimation

Variable	Observations	Mean	Min	Max
Early stage entrepreneurial activity	117833	*0.06*	*0*	*1*
Opportunity driven entrepreneurs	117833	*0.048*	*0*	*1*
High-growth expectations	117883	*0.0068*	*0*	*1*
Age	110872	*42*	*15*	*99*
Education	115248	*0.218*	*0*	*1*
Entrepreneurial confidence	58566	*0.43*	*0*	*1*
Opportunity perception	49650	*0.348*	*0*	*1*
Gender	117831	*1.53*	*1*	*2*
Fear of Failure	58712	*0.35*	*0*	*1*
Total number of owners	7598	*1.86*	*1*	*10*

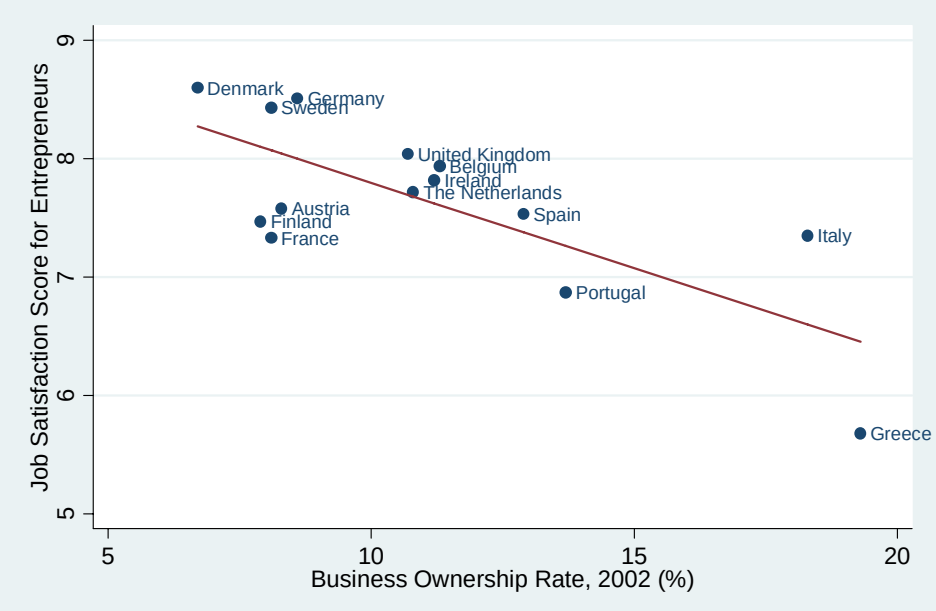
Availability of credit	115818	*120*	*11*	*247*
Cost of starting a business	117833	*9.57*	*0*	*38*
Cultural orientation	53629	*0.345*	*0*	*1*
Gross domestic product	117833	8.84e	9.92e	1.10e
Life Satisfaction score	117833	7.23	5	8.3

Figure 1: Relationship between Happiness and the Global Entrepreneurship Index



(Source: Authors' calculations based on the GWP and the GEINDEX – see Ács and Szerb, 2009)

Figure 2: Business Ownership Rates and the Job Satisfaction of Entrepreneurs in Selected European Countries



(Source: author's construction based on data from :Blanchflower, (2004 and, Van Stel, 2004)

Table 1: Variables and Sources of Data: 3SLS Estimation

Variable	**Description**	**Source**
Ratio between opp and nec	Opportunity driven entrepreneurship (opp) / Necessity driven entrepreneurship (nec)	1
GDP per capita	Gross Domestic Product per capita PPP	4
Total economic freedom	Index of Economic Freedom	3
IncomeGini	Gini coefficient for income distribution	5
Wealth aspiration	GDP Per capita PPP $ in 2008 multiplied by IncomeGini	
Life satisfaction	The national level of life satisfaction score	2

Sources: (1) GEM Survey 2005, (2) World Database on Happiness, (3) Index of Economic Freedom of The Wall Street Journal and The Heritage Foundation. (4) IMF Economic outlook Database (5) World Bank Development Indicators

Table 2: Variables and Data Sources

Variable	Description	Source
Dependent		
Early stage entrepreneurial activity	Adult individual (18-64) who is starting a new business or currently a owner-manager of a new business, that has paid salaries, wages, or any other payments to the owners not more than 42 months	*1*
Opportunity driven entrepreneurs	Individual involved in early-stage entrepreneurial activity (as defined above) who claim to be driven by opportunity as opposed to finding no other option for work; and indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income	*1*
High-growth expectations	Individual involved in early-stage entrepreneurial (as defined above) *and* expect to employ at least 20 employees five years from now	*1*
Individual Capabilities		
Age	Age	*1*
Education	A dummy = 1 if the entrepreneur has a graduate qualification and = 0 if otherwise	*1*
Entrepreneurial skills (confidence)	Adult individual (18-64) who believe to have the required skills and knowledge to start a business	*1*
Opportunity perception	Adult individual (18-64) who see good opportunities to start a firm in the area where they live	
Gender	Male = 1 and female = 2	*1*
Fear of Failure	Adult individual (18-64) who indicate that fear of failure would prevent them from setting up a business	*1*
Industry-level determinants		
Networks	Number of actual owners and number of other entrepreneurs that knows	*1*
Availability of credit	The amount of credit extended to the private sector	

		5
Institutional determinants		
Cost of starting a business	The cost to start a business as % of GNI	*3*
Cultural orientation	Adult individual (18-64) who agree with the statement that in their country, most people consider starting a business as a desirable career choice	*1*
Gross domestic product	GDP in constant terms	*5*
Happiness measure		
Life Satisfaction score	The national level life satisfaction score	*2*

Sources: (1) GEM Survey 2005, (2) The Gallup World Poll, (3) World Bank Doing Business Indicators 2005, (4) The Worldwide Governance Indicators, (5) World Development Indicators, online.

Table 3: OLS model results

Variable		
Outcome equation:	**Happiness**	**Ratio between opp and nec**
Constant	2.05 (1.96)**	-57.00(-2,45)**
Ratio between opp and nec	0.050(1.79)***	
Squared Ratio between opp and nec	-0.002 (-1.78)***	
Gross national income per capita	0.074 (4.14)*	-0.998(-1,89)***
Squared Gross national income per capita	-0.0005 (-3.29)*	0.0077(1.91)***

Wealth aspiration	-0.000007 (-2.35)*	
Wealth Gini	1.97 (2.43)**	
Hours work	-0.00006 (-0.18)	
Total economic freedom	0.032(3.08)**	-0.234(-0.73)
Happiness		14.61(2.15)**
Number of observations	22	22
Chi2	89.09*	9.42**

*(z-value's in brackets. A * indicates significance at the 1 % level, a ** significance at the 5% level and a *** significance at the 10% level)*

Table 4: Double Probit Estimation Results: The Effect of National Happiness on Early Stage Entrepreneurial Activity

Variable		
Outcome equation:	**High-growth expectations**	**High-growth expectations**
Constant	1.29 (4.50)*	2.08 (5.11)*
Age	-0.00 (-0.12)	0.00 (0.30)
Gender	-0.18 (-2.97)**	-0.25 (-3.22)*
Education	0.11 (1.64)	0.13 (1.49)
Fear of failure	-0.02 (-0.25)	-0.02 (-0.21)
Entrepreneurial confidence	-0.40 (-4.65)*	-0.35 (-2.58)**
Number of owners/partners	0.12 (5.49)*	0.15 (5.56)*
Cultural support	-0.05 (-0.85)	-0.02 (-0.32)
GDP	0.00 (0.70)	0.00 (0.89)
Happiness score in 2005	**-0.11** (-2.29)**	**-0.25** (-4.49)*
Selection equation:	**Total early stage entrepreneurial activity (TEA)**	**Opportunity-driven TEA**
Constant	-0.22 (-1.43)	-1.17 (-6.73)*
Start-up costs	-0.01 (-4.10)*	-0.00 (-0.59)
Age	-0.00 (-3.99)*	-0.01 (-5.08)*
Gender	-0.02 (-0.92)	-0.01 (-0.47)
Fear of failure	-0.19 (-6.18)*	-0.24 (-7.17)*
Entrepreneurial confidence	0.56 (16.35)*	0.58 (15.14)*
Opportunity perception	0.15 (5.26)*	0.17 (5.79)*
Know entrepreneurs (network)	0.18 (6.88)*	0.22 (7.66)*
Education	0.09 (3.03)*	0.18 (5.61)*
Availability of credit	0.01 (5.30)*	0.00 (7.57)*
Cultural support	0.09 (3.14)*	0.05 (1.77)**
GDP	0.00 (1.57)	0.00 (1.00)

Happiness score in 2005	**-0.15** (-7.36)*	**-0.07** (-3.18)*
Diagnostics		
Number of Observations	12,228	12,235
Censored Observations	9,628	10,288
Uncensored Observations	2,600	1,1947
ρ	-0.79	-0.75
LR test (ρ=0)	15.1*	6.78*

*(Z-ratio's in brackets. A * indicates significance at the 1 % level and a ** significance at the 5% level)*