

POVERTY, HUMAN DEVELOPMENT AND ENTREPRENEURSHIP

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POVERTY, HUMAN DEVELOPMENT AND ENTREPRENEURSHIP

JOSÉ ERNESTO AMORÓS

OSCAR CRISTI

When I was running about this town a very poor fellow, I was a great arguer for the advantages of poverty; but I was, at the same time, very sorry to be poor. Sir, all the arguments which are brought to represent poverty as no evil, shew it to be evidently a great evil. You never find people labouring to convince you that you may live very happily upon a plentiful fortune. – So you hear people talking how miserable a King must be; and yet they all wish to be in his place.

Fragment of 'Life of Johnson'¹ by James Boswell in. R. W. Chapman (Ed.) Oxford: Oxford UP, 1987 (first published in 1791), p. 312.

1. INTRODUCTION

As stated by the World Bank (2008b) nearly more than 1.4 billion people live in conditions of poverty in developing countries. Regions like Latin America and the Caribbean face a sluggish economic growth, while poverty reduction is also proceeding more slowly. The most complex case is Sub Saharan Africa, where poverty reduction

¹ Samuel Johnson, the distinguished eighteenth-century writer who compiled the first English language dictionary, experienced poverty in his youth. In 'Life of Johnson,' recorded by his friend James Boswell, Johnson insists that poverty is undeniably a great evil. The fragment and the explanation were taken from World Bank's 'A Collection of Poems and Personal Accounts of Poverty' <http://go.worldbank.org/MSGG2X5020>

since 1990 has lagged far behind the other regions and the future trends in order to reduce the poverty will display very slow falls over the next years (Chen and Ravallion, 2008; World Bank, 2008a). Inequity conditions are also present in developed economies. For example, the official data of U.S. Bureau Census reports that the official poverty rate in 2007 was 12.5 percent; this meant that 37.3 million people lived in a situation of poverty, mainly Afro-American and Hispanics (DeNavas-Walt, Proctor and Smith, 2008). In the European Union the figure is similar: in EU-27, approximately 16% of the population, 79 million people, lived below the poverty threshold (Wolff, 2009). Poverty and inequity are practically transversal for all countries. For this reason poverty reduction is considered the first objective of the Millennium Development Goals². Even though absolute number of poor people has had an important decrease in the last two decades³ (mainly in South and East Asia), policies and programs for poverty reduction are still in the focus of social and economic development discussions.

The quite extensive literature on poverty and on entrepreneurial dynamics contrasts with the reduced number of works that focus on the relationship between these two fields, mainly in developing economies (Naudé, 2009). This occurs in spite of the increasing empirical evidence that claims for a joint analysis of poverty and entrepreneurial activity. This is the case of Banerjee and Duflo (2007) who in their essay on the economic lives of the poor described the relationship between poverty and

² In September 2000, 189 countries signed the Millennium Declaration, which led to the adoption of the Millennium Development Goals. The poverty goal calls for reducing by half the proportion of people living on less than a dollar a day by 2015. A reduction from 28 percent in 1990 to 12.7 percent in 2015 would reduce the number of extreme poor by 363 million. For more information see the Millennium Development Goals website: <http://www.developmentgoals.org>.

³ According to the United Nations (2009) in 2009, an estimated 55 million to 90 million more people will be living in extreme poverty than anticipated before the crisis.

entrepreneurship: ‘All over the world, a substantial fraction of the poor act as entrepreneurs in the sense of raising capital, carrying out investment, and being the full residual claimants for the resulting earnings’ (Banerjee and Duflo, 2007: 151). In general terms the poorest population has few labor skills and little capital and the option to be an entrepreneur could be easier than finding a remunerated stable job. Those factors may help to explain why in relative terms ‘poor countries’ have more entrepreneurs up to the point that Scott Shane states ‘...if you want to find countries where there are a lot of entrepreneurs, go to Africa or South America’ (Shane, 2009: 143).

The Global Entrepreneurship Monitor, GEM Project provides empirical evidence for that statement by showing that developing economies since year 2001 face high prevalence rates of people involved in entrepreneurial activities. These facts suggest the convenience of reviewing the commonly accepted idea that a country’s higher development level can encourage and strengthen entrepreneurial activity (Acs, Arenius, Hay and Minniti, 2005: 38).

In this chapter we analyze the relationship between poverty indicators and entrepreneurial activities rates at country level. First, we show a general framework to define poverty and how poverty is measured. Second, we propose an empirical exercise that examines the effect of poverty indicators on entrepreneurial activities and how entrepreneurship is related to human development and consequently to poverty reduction. In order to do this we use data from the Global Entrepreneurship Monitor, GEM project. Finally we conclude with some remarks and implications for future research.

2. POVERTY: GENERAL FRAMEWORK

2.1 What is poverty?

Try to define the concept of poverty is not a simple task. World Bank's statement on understanding poverty says: 'Poverty is hunger. Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not having access to school and not knowing how to read. Poverty is not having a job, is fear for the future, living one day at a time. Poverty is losing a child to illness brought about by unclean water. Poverty is powerlessness, lack of representation and freedom' (World Bank, 2009). Poverty is a complex phenomenon that includes a widespread scope that covers from personal experience (Shostak, 1965), an economic problem, and finally a multidimensional approach that includes individual (psychological), social, economic, and political levels (Narayan et al., 2000; Misturelli and Heffernan, 2008). The most commonly accepted definition is related to an income-based approach (while this definition is partial and limited), which states that poverty is the lack of income or financial resources to satisfy the individuals' basic needs and/or to achieve a minimum standard of living (Sharp, Register and Grimes, 2003: 167; Singer, 2006; Misturelli and Heffernan, 2008)⁴.

⁴ The New Oxford American Dictionary (2005) defines poverty as 'the state of being extremely poor; the state of being inferior in quality or insufficient in amount'. Poor is defined like 'lacking sufficient money to live at a standard considered comfortable or normal in a society'. The definition and explanation of in Encyclopædia Britannica (2009) is very similar: 'the state of one who lacks a usual or socially acceptable amount of money or material possessions. Poverty is said to exist when people lack the means to satisfy their basic needs. In this context, the identification of poor people first requires a determination of what constitutes basic needs. These may be defined as narrowly as 'those necessary for survival' or as broadly as 'those reflecting the prevailing standard of living in the community.'

In an extensive review and survey of 578 documents, Misturelli and Heffernan (2008) analyzed 159 different definitions of poverty. They reviewed the definitions made by scholars, NGOs, governments and donors from the 1970s to 2000s. They categorized seven main topics identified across the definitions. These mayor themes are shown in Table 1. According to their analysis, during the last three and a half decades the material, physical, and economic factors are the predominant themes, but the presence of all the components reaffirms the multifaceted and multidimensional nature of poverty.

Table 1 Major themes and their respective topics on poverty definitions

<ol style="list-style-type: none"> 1. Material factors: housing, clothing, standard of living. 2. Physical factors: food, water, health, physical survival. 3. Economic factors: poverty lines, low income, unemployment. 4. Political factors: rights, lack of political participation (community-level), no voice (individual-level), references to the wider international setting. 5. Social factors: lack of social esteem, lack of social life, inability to participate in community life. 6. Institutional factors: lack of access to services and institutions such as education and health services. 7. Psychological factors: feelings and beliefs associated with poverty.

Source: Misturelli and Heffernan, 2008: 670

2.2 How is poverty measured?

Measuring poverty rates, at national or international comparable standards, is also a complex task. In many countries, mainly in the less developed ones, the consumption rates (the minimum expenditures made by poor people to subsist) are the preferred welfare indicators. Developed countries define their own poverty thresholds generally

based on individual or family income equality (or inequality). Following the monetary base of personal incomes or expenditures, the World Bank back in 1990 defined a common standard: the international poverty line. Poverty lines are calculated on the basis of several methods and surveys sources (Ravillion, Chen and Sangraula, 2008) and they attempt to reflect a social perception of ‘relative deprivation’ which rises with income (World Bank, 2008b: 2). The international poverty line has been recalculated in 2008 and is at \$1.25 USD a day measured in 2005 prices⁵. Other aggregate indexes like the Human Development Index calculated by the United Nations Development Programme (UNDP) includes health, education and also estimates of purchasing power parities (PPP) in order to measure the different degrees of development between rich and poor countries. In the next sections we will take up some of these measures in order to use them in our empirical approach.

3. AN EMPIRICAL APPROACH TO ENTREPRENEURSHIP, HUMAN DEVELOPMENT AND POVERTY

The interplay between entrepreneurial dynamics and economic development and growth presents a complex relationship (Spencer and Gómez, 2006). Modeling these relationships is not an easy task due to the many factors affecting entrepreneurial activity and economic growth (Wennekers and Thurik 1999). Moreover, it is particularly difficult to determine the direction of causality between entrepreneurial activities and

⁵ For a detailed explanation and methodology of the new poverty lines see World Bank (2008b) and Ravillion, Chen and Sangraula (2008).

economic growth at the country level. Thus, some studies emphasize the effect of entrepreneurial activity on national economic growth while others focus on the effect of economic growth on countries' entrepreneurial rates. Carree et al. (2002, 2007) are among the few studies that develop a model of simultaneous equations for both economic growth and entrepreneurship rate

On the side of the effect of entrepreneurial activity upon economic development there is a extended body of research that examines 'entrepreneurial activities' as a factor contributing to economic growth during the last decades of the twenty-century (Wennekers and Thurik, 1999; Acs and Storey, 2004; Audretsch and Keilbach 2004; Karlsson, Friis and Paulsson, 2004; Schramm, 2004). Within this literature there are works that provide empirical evidence of a positive effect of entrepreneurial activity on economic growth only in developed and high-income countries (Tang and Koveos, 2004; van Stel, Carree, and Thurik, 2005; Wennekers et al., 2005 Acs and Amorós, 2008). Other studies like Carree et al. (2007) and Hessels, van Gelderen, and Thurik (2008) state that the relationship between business ownership rates and economic growth changes over time and also depends on the level of economic development. Other authors remark that only a few number of innovative and high-growth entrepreneurs cause a positive effect on economic growth (Wong, Ho, and Autio, 2005; Autio, 2007; Shane, 2009). Furthermore the competitive impact, and consequently the contribution of the entrepreneurial efforts to economic growth, differs not only among countries having a, similar degree of development (Grilo and Irigoyen, 2006; Carree et al., 2007), but also among regions in a single country (Audretsch and Keilbach, 2004; Lee, Florida, and Acs, 2004; Belso-Martínez, 2005).

Regarding the effect of economic development on entrepreneurial activity Carree et al. (2002) found a U-shaped relationship between the level of per capita income and the rate of self-employment (or business ownership) in 23 OECD countries. Later, they revisited this relationship with new evidence and obtained a 'L-shaped' model (Carree et al, 2007). Wennekers et al. (2005) using GEM data showed three U-shaped approaches between entrepreneurship rates and the level of economic development, measured by income per capita, innovation capacity and diverse associated socio-demographic variables. Acs and Amorós (2005) and Amorós and Cristi (2008) revisited the Wennekers et al.'s (2005) approach using longitudinal GEM data.

Although there is a significant heterogeneity in the literature that explores the relation between economic development and entrepreneurial activity, most of the studies in the field agree on one fact: the percentage of population that could be considering involved on entrepreneurial activities is higher in less-developed regions or countries (Acs and Amorós, 2008).

In what follows we use data from GEM project and poverty indicators to empirically address the relationship between poverty and entrepreneurial activities. In doing so, we expect to contribute to reduce the lack of research in this specific field.

3.1 Measuring entrepreneurship rates: the GEM project

GEM provides harmonized, internationally comparable data on entrepreneurial activity that help us to empirically address the characterization of entrepreneurial activity at country level. By the end of 2008, 66 different countries participated in GEM. Among

them, 37 countries could be classified as developing economies (low and middle-income). GEM estimates the percentage of adult population (people between 18–64 years old) that is actively involved in starting a new venture. This Early-stage Entrepreneurial Activity Index (TEA) disaggregates the entrepreneurial activity accordingly to the main two motives that entrepreneurs ‘follow’: The first one includes opportunity-based entrepreneurs (OPP) who have taken actions to create a new venture pursuing perceived business opportunities, while the second category corresponds to the necessity-based entrepreneurs (NEC) who become involved in entrepreneurial activities because they have no other way to earn a living.

3.2 Poverty indicators: the Human Development Index an the GINI coefficient

Not all poverty lines or other comparable specific poverty indicators among countries are available over the period 2001-2007 that GEM considers. Consequently, we use the Human Development Index, HDI, the HDI trends over time and the Gini coefficients as proxies for poverty. Both HDI and GINI are available in yearly bases for most countries in the GEM sample.

HDI is a composite index that measures average achievement in a country by evaluating three dimensions of human development: life expectancy at birth (long and healthy life), adult literacy rate (education and knowledge) and GDP per capita in purchasing power parities (decent standard of living)⁶. HDI takes values from 0 to 1

⁶ These elements coincided with some of the major themes and topics related to poverty definitions as we

where 1 stands for the highest attainment. The United Nations Development Programme calculates the HDI and publishes these measures in the Human Development Reports⁷.

The Human Development Report 2007-2008 publishes comparable trends that show HDI progress in the long, medium and short-term. We use the HDI short-term trends that cover the period 2000-2006. These trends take values from -1 to 1, where a negative value represents a decreasing trend in the country's Human Development.

The Gini coefficients measure the degree to which the distribution of income or consumption among individuals or households in a country deviate from a perfectly equal distribution. Gini coefficients measure the area between the Lorenz curve⁸ and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Gini coefficients for countries take values from 0 that represent absolute equality to a value of 100 that is absolute inequality. GINI data was taken from World Income Inequality Database V2.0c, May 2008 published by the UNU-WIDER and from the World Development Indicators published by the World Bank.

characterized them in Table 1 (Misturelli and Heffernan, 2008).

⁷ For more information on the methodology of HDI, see Human Development Report 2007-2008, technical notes (UNDP, 2007: 355).

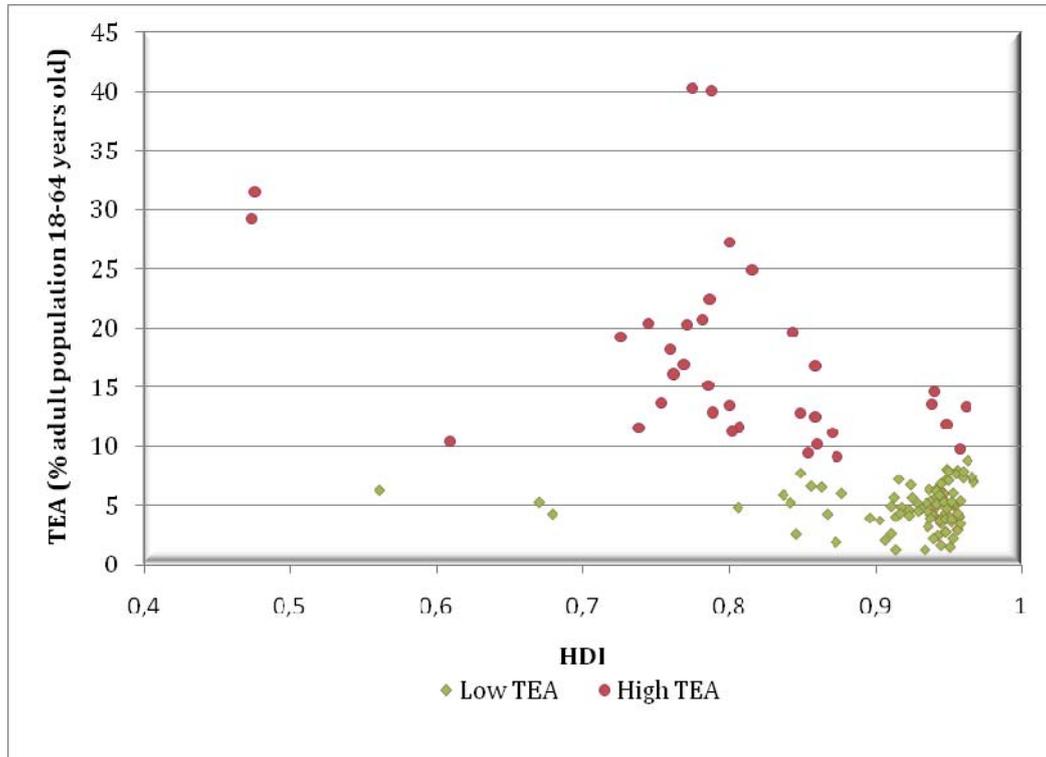
⁸ Lorenz curve shows the cumulative distribution of a percentage of total households income that is going to the lowest percentiles of families; it is a way of representing income inequality distribution in a country (Sharp, Register and Grimes, 2003: 171). About Gini and Lorenz curve calculation see Gastwirth (1972).

Table 2 Variables Description

Variable	Description	Source	Mean	Max.	Min.	SD.
TEA	Early-stage entrepreneurship activity; percentage of 18-64 population involved in setting up a business they will own or own and manage up to 3.5 years old.	GEM	8.99	40.34	1.25	6.14
NEC	Percentage of 18-64 population who are involved in TEA (as defined above) and manifest necessity-based motivations to be entrepreneurs (no other ways of earning incomes).	GEM	2.33	14.4	0.09	2.57
HDI	Human Development Index	UNDP	0.842	0.968	0.45	0.114
HDI short-term	Progress (or decrease) of a specific country's HDI trend over 2000-2006.	UNDP	0.025	0.061	-0.017	0.015
GINI	Gini coefficients of countries' equality (inequality) income distribution.	World Bank and UN-WIDER	36.56	62.83	22	10.04

3.3 The relative sizes of entrepreneurial activity among countries.

As it was already mentioned, there is a belief that in relative terms less human developed countries have higher entrepreneurship rates. In Figure 1 we use TEA and HDI to illustrate how high (low) TEA levels are found more often in countries with lower (higher) HDI.



Note: Low TEA are values below TEA sample mean= 8.9

Figure 1 Early Stage Entrepreneurial Activity versus HDI using Thresholds: 2001-2006.

3. 4 The Importance of Entrepreneurial Motivations of the Poorest.

Schumpeter (1912[1934]) describes the entrepreneurs as revolutionary innovators. The Schumpeterian entrepreneurs are individuals that have a ‘pull motive’, that is to say people that have desire for independence, increased income, status or recognition. Nevertheless, there are also several individuals that are ‘pushed’ into entrepreneurship because they do not have better formal job options. Reynolds et al. (2005: 217) describe this motivation as ‘they cannot find a suitable role in the world of work’ and ‘creating a new business is their best available option’. Although many studies recognize that most entrepreneurial activity results from opportunities (Kolveried, 1996; Feldman and Bolino

2000; Carter et al., 2003; Bosma et al., 2008), necessity-motivated entrepreneurship is nonetheless significant in many developing countries. However the ‘necessity or opportunity’ motives to become an entrepreneur could be ambiguous concepts because business opportunities change depending on the context; and the way that people qualify for a ‘real business opportunity’ also change. For example, the opportunity is not the same for a Sub-Saharan shepherd contrasted to a Silicon Valley engineer looking for venture capital to develop new microchip systems. Obviously both are valid business opportunities but they are both dependent on the context and position of the observer (Naude, 2007). For the engineer, the shepherd could be a typical necessity-based survivalist entrepreneur, but for him, the shepherd, selling an extra kilo of wool or meat is a great opportunity to improve his incipient business.

Since 2001 GEM project analyses this dichotomy between opportunity driven and necessity driven entrepreneurs⁹. GEM’s Global Reports have shown that there are relatively high prevalence rates of necessity-based entrepreneurs in low and middle-income countries, as Figure 2 shows. In many of these developing countries, necessity entrepreneurship can be linked to a lack of institutions and policies which probably cause lower productivity and investment, and higher unemployment rates (Caballero, 2006). Many of these entrepreneurs are basically informal, lifestyle or survivalist entrepreneurs (Naudé, 2007), and for these characteristics they are also self-employed or only have a reduced number of employees (Banerjee and Duflo, 2007).

⁹ The GEM Project measure of entrepreneurial activity may face biased problems. In fact, GEM Project remarks: ‘We should note that GEM may underestimate necessity entrepreneurship and overestimate opportunity entrepreneurship’ (Bosma et al., 2009:23).

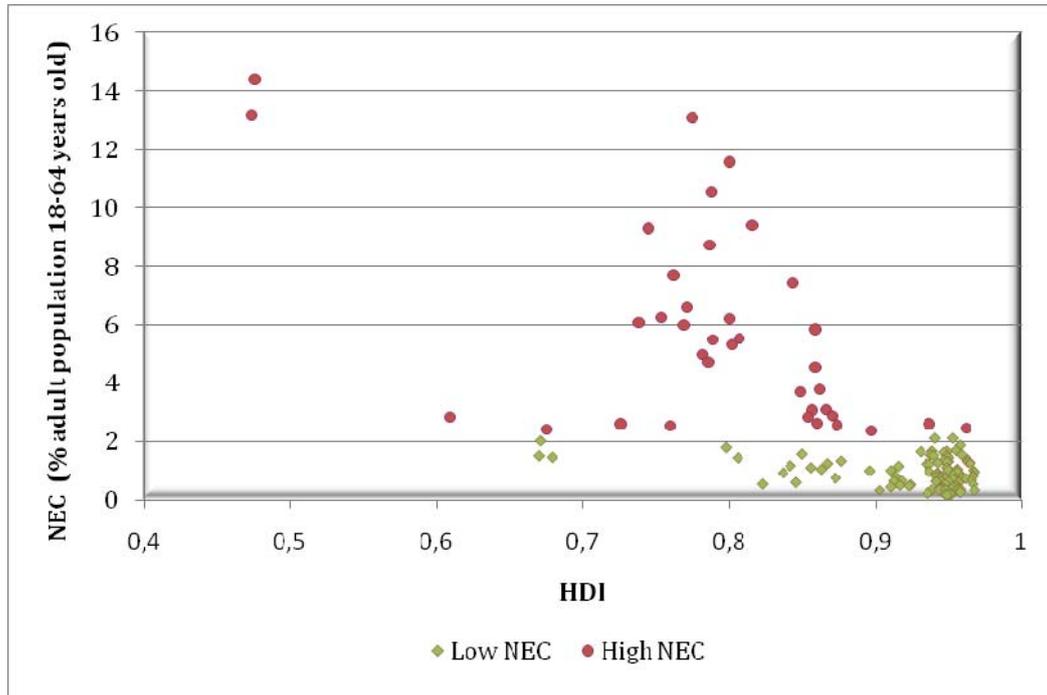


Figure 2 Necessity- Based Entrepreneurial Activity versus HDI using thresholds: 2001-2006.

3.5 A formal model for Early Stage and Necessity-Based Entrepreneurial Activity

To provide a formal analysis of the effect of Human Development (HDI) on TEA and NEC, we follow the previously mentioned works that explore the effect of GDP on the latter variables. The originality of our approach consists in using poverty indicators to explain TEA and NEC.

The proposed model for TEA or NEC is:

$$EA_{it} = \alpha_0 + \alpha_1 HDI_{it} + \alpha_2 HDI_{it}^2 + \alpha_3 GINI_{it} + \varepsilon_{it} \quad (1)$$

With $i=1\dots,n$ and $t=1\dots,T$. Here n is the total number of countries, T is the total number of years, EA_{it} represents entrepreneurial activity in country i in year t measured by TEA or NEC; HDI^2 denotes the squared value of HDI_{it} ; $GINI_{it}$ accounts for the GINI coefficient in country i in year t ; and ε_{it} is a random error term with 0 mean and constant variance. The α 's are unknown parameters that we intend to estimate.

Here we hypothesize that the lower the country's level of HDI is, the higher the level of entrepreneurial activity will be in the case of the lowest human developed countries.. The sign of this relationship changes for countries with high levels of HDI. This type of relationship between entrepreneurial activity and HDI can be described in terms of a 'U' model. We also hypothesize that improvements in a country's income equity have a positive effect on HDI.

We estimate equation (1) by pooling the data in sample¹⁰. Consistency of the estimators in this equation requires that HDI and HDI^2 not be endogenous. For this we use a modified Hausmann test proposed by Wooldridge (2002, Chapter 6.2)¹¹. Our

¹⁰ We do not perform panel data estimation because there are several countries with few observations along time.

¹¹ We use a residual-based form of the Hausmann test that turns to be asymptotically equivalent to the original form of the Hausmann test (Wooldridge, 2002, Chapter 6.2). The test involves estimating auxiliary reduced-form regressions for the regressors suspected to be endogenous: HDI and HDI^2 . Those are linear regressions for each of those regressors on a constant, all the exogenous variables of the model and regressor specific instruments. Then the equation (1) is estimated including the reduced-form residuals as additional explanatory variables. The joint statistical significance of the coefficients associated with the residuals is then evaluated. If those parameters are jointly not significant then the Hausmann test does not reject the hypothesis of exogeneity of the regressors. As instruments for HDI and HDI^2 we use variables for countries' government institutions. Institutions (including government) are crucial for development and economic performance (North, 1990). Governance and government quality (and the successive policies) is expected to make a difference on economic outcomes included entrepreneurship activities (Baumol, 1990; Boettke and Coyne, 2007; Minniti, 2008; Amorós, 2009). The selected variables for instrumental procedures are: Political stability and absence of violence, Government effectiveness, Rule of law, and Control of corruption from the World Bank's Worldwide Governance Indicators (WGI). For more information on the WGI methodology and descriptions, see Kaufmann, Kraay and Zoido-Lobaton (1999) and, Kaufmann, Kraay and Mastruzzi (2008).

results indicate that this test does not reject the hypothesis of exogeneity of the regressors.

We also need to disregard the possibility of a spurious relationship between entrepreneurial activity and *HDI* and *GINI*, otherwise significance tests will tend to indicate a relationship between these variables when in fact none exists. For this we analyze the existence of serial autocorrelation. No serial autocorrelation among the residuals of a regression for *TEA or NEC* ensures that there is not a spurious relationship between these variables (Pindyck and Rubinfeld, 1991: section 15.4). To test for serial autocorrelation we use a test proposed by Wooldridge (2002: 282-283). The result of this test indicates that we do not reject the null hypothesis of any serial correlation. This supports the hypothesis that there is not a spurious relationship among entrepreneurial activity and *HDI and GINI*.

Parameter estimates for equation (1) using Ordinary Least Squares (OLS) are shown on Table 3. Results indicate that all parameters are significant at 1% of significance level.

Results support our hypothesis of a 'U' form for the relationship between poverty levels and entrepreneurial activity measured as *TEA or NEC*. Moreover, and as it was expected, income inequality forces people to start new business. This is consistent with Bosma et al. (2009) and Shane (2009) who state that more entrepreneurs are found in less developed countries.

Table 3 Estimates of the parameters of the Regression Model for Early Stage Entrepreneurial Activity and Necessity-Based Entrepreneurial Activity using OLS.
Depended variables: TEA and NEC

	TEA model	NEC model
HDI	-1174 (269)	-347 (97)
HDI ²	657 (153)	184 (55)
Gini	0.27 (0.07)	0.07 (0.02)
Cons.	521 (118)	163 (43)
Values		
<i>F</i>	24.73	46.6
R ²	0.43	0.63
Adj. R ²	0.41	0.61
<i>n</i>	103	87

Notes: (Standard Errors); all estimates are significant at 1% level.

3. 6 The contribution of the entrepreneurial activities of poor people to development.

Two well documented facts on theoretical and empirical work are that not all entrepreneurial activities contribute to economic growth, and that wealth creation does not necessary involve substantial poverty reduction (Singer, 2006; Naudé, 2007). A simple ‘equation’ can illustrate it: entrepreneurs with low levels of education, resources and social capital, generally are involved in low productivity activities. Consequently, their impact on economic growth is also low.

These affirmations could be linked to Baumol’s (1990) argument that the

allocation of entrepreneurship in the economy is influenced by the structure of rewards in a country (Desai and Acs, 2007). Baumol's contribution with respect to the concept of productive, unproductive (rent-seeking), and destructive¹² (for example illegal or rent destroying) entrepreneurship links not only the rates (or level) of entrepreneurial activities with a specific context, but also relates the allocation of entrepreneurial efforts to institutional variables. Specifically, Baumol (1990: 899) states 'entrepreneurial behavior changes direction from one economy to another in a manner that corresponds to the variations in the rules of the game.' Many poor entrepreneurs operate in environments with institutions that are unreliable, 'rules of the game' that are not clear (or virtually no rules of the game) and a 'destructive uncertainty' (Wood, 2003; Berner, Gómez and Knorringa, 2008). These informal, lifestyle and survivalist entrepreneurs are a response to a weak institutional environment (de Soto, 1989). In Baumol's logic many of these informal survival entrepreneurs possibly will be categorized as unproductive but at the same time they could be crucial in developing and fragile states (Banerjee and Duflo, 2007; Naudé, 2007).

Nevertheless, in spite of the characteristics of necessity-based entrepreneurs, we cannot state the supremacy of opportunity-based entrepreneurs over the former type. While some literature suggests that higher rates of opportunity-based entrepreneurship are preferred to higher rates of necessity-based entrepreneurship (Acs et al., 2005; Acs and Varga, 2005), necessity entrepreneurs are not necessarily less successful (Block and Sandner, 2009). Again, not all opportunity-based entrepreneurs create flourishing

¹² In specific contexts 'destructive entrepreneurship' cannot be described as being good or bad and they depend of the structure of incentives in a particular time and country. This situation is relevant in post-conflict poor and fragile estates. For more discussion about this topic see Deasai and Acs (2007) and Naudé (2007)

ventures with high impact on job creation and economic growth. Some opportunity-driven entrepreneurs can be categorized following an overly simplistic approach because both push and pull factors are frequently concerned in the reasons why people start new business ventures (Williams, 2009). Necessity entrepreneurs could be relevant for many economies because in many cases, despite the extremely small scale of the business, they can still be productive.

Thus, there is not a clear reason to qualify all of them like ‘unproductive’ because *ex-post* they will be a building block to more productive activities. These entrepreneurs can contribute to social and anti-poverty interests although they do not have a substantial impact on economic growth. They at least, avoid poverty from increasingly getting worse under certain circumstances or constitute a base for future social mobility (Grosh and Somolekae, 1996; Sandy 2004).

Because we expect a lagged effect of TEA and NEC on HDI, it is better to relate some indicator of poverty reduction trend with the mean values of TEA and NEC for a period of time. The HDI short-term trends for the period 2000-2006, that evaluates for each country its improvement trends on human development is a good candidate for a model that considers the above mentioned lagged effects. Figure 3 and Figure 4, based on each country’s mean value of TEA and NEC and the HDI short-term trends, suggest that countries with higher mean levels of TEA and NEC tend to do better in terms of human development.

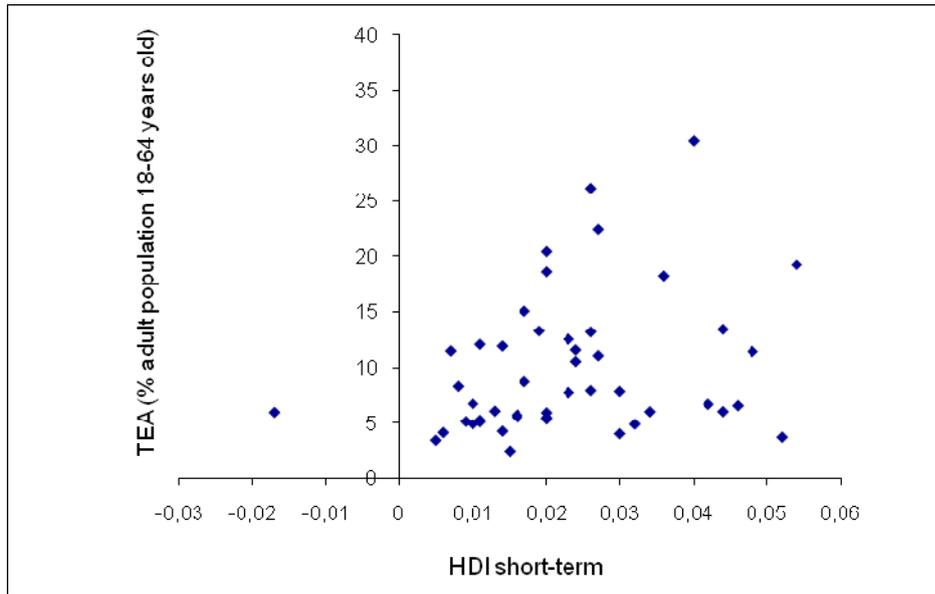


Figure 3 Country's mean Early Stage Entrepreneurial Activity versus HDI short-term, period 2000-2006

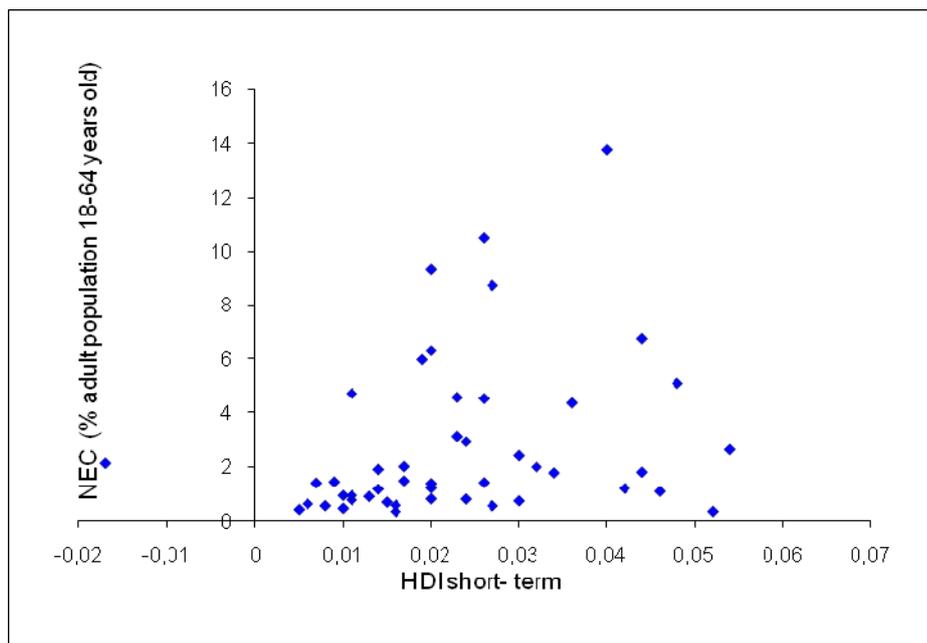


Figure 4 Country's mean Necessity- Based Entrepreneurial Activity versus HDI short-term, period 2000-2006

In order to formally analyze the effect of mean TEA and mean NEC on HDI short-term trends we propose the following two models for HDI short-term (HDIS):

$$HDIS_i = \beta_0 + \beta_1 TEA_i + \beta_2 TEADUMMY_i + \beta_3 NECPART_i + \beta_4 GINI_i + v_i \quad (2)$$

and

$$HDIS_i = \gamma_0 + \gamma_1 NEC_i + \gamma_2 NECDUMMY_i + \gamma_3 GINI_i + v_i \quad (3)$$

In equation (2) TEADUMMY is the result of multiplying TEA by DUMMY, where DUMMY is a variable that takes a value of 1 for highly developed countries¹³ or 0 otherwise; NECPART corresponds to the ratio between NEC and TEA (NEC/TEA); and v is a random error with 0 mean and constant variance. The β 's are unknown parameters that we intend to estimate.

For this model we hypothesize that the higher a country's average value of TEA is, all the better will be the country's results to reduce poverty. Moreover we expect a relative higher impact of TEA upon poverty reduction in less developed countries. This effect is captured by TEADUMMY. The variable NECPART is included to capture a possible effect of the composition of TEA on poverty reduction. We hypothesize that, owing to the strong link between poverty and NEC, the higher a country's average value on NECPART is, the greater the effect of TEA on poverty reduction will be. Finally, the GINI coefficient is included because it is expected that countries with better income distribution also perform better on poverty reduction.

In equation (3) NECDUMMY is the results of multiplying NEC times DUMMY; and v_i is a random error with 0 mean and constant variance. The γ 's are unknown

¹³ The countries were grouped following the criteria using on GEM 2008 Executive Report (Bosma et al., 2009) that is based on World Economic Forum's Global Competitiveness Report 2008-2009 (Porter and Schwab, 2008).

parameters that we intend to estimate. In this model, as in equation (2), we hypothesize that higher levels of NEC allow countries to better reduce poverty along time.

In these models we postulate that TEA and NEC may affect the level of short-term HDI, but it is also true that this latter variable can affect the value of the former variables. This suggest an endogeneity problem on the regressors.. In fact, the modified Hausmann test proposed by Wooldridge (2002, Chapter 6.2)¹⁴ indicates that we must reject the hypothesis of exogeneity of TEA and NEC. Thus we estimate these two models using two stage least squares (2SLS) where the mean value of TEA and NEC for each country are instrumented using the exogenous variables of the models and a set of institutional variables: political stability, rule of law and control of corruption from the World Bank's Worldwide Governance Indicators (WGI)¹⁵. Parameters estimates for equations (2) and (3) are shown in Table 4.

Results displayed in Table 4 support the hypothesis that higher mean values of TEA and NEC have a positive effect on countries' poverty reduction trend. Moreover TEA has a relatively higher effect on poverty reduction in less developed countries, unlike the effect of NEC on poverty reduction which is the same for all countries. With regard to NECPART, results indicate that the composition of TEA has no significant effect on the contribution of TEA to poverty reduction. Finally, and as expected, the improvement in income equity measured by the GINI coefficient helps to reduce poverty.

¹⁴ For this test we proceed as explained in footnote 11.

¹⁵ Support for the use of these instrument for TEA and NEC can be found in Baumol (1990); Boettke and Coyne (2007); Minniti (2008) and Amorós (2009)

Table 4: Estimates of the parameters of the regression models for HDI using 2SLS. Dependent variable: HDI short-term (all the variables correspond to correspond to the mean value of each country)

	Model of equation (2)	Model of equation (3)
TEA	0 .0018 *** (0.0006)	
TEADUMMY	-0.0017 *** (0.0006)	
NECPART	-0.0067 (0.0228)	
GINI	-0.0009 *** (0.0003)	-0.0008** (.0003)
NEC		0.0042*** (0.0014)
NECDUMMY		-0.004 (0.004)
Constant	0.0445*** (0.0106)	0.0439*** (0.011)
Values		
<i>F</i>	4.71***	4.48***
<i>n</i>	45	45

Notes: (Standard Errors), *p < 0.1; ** p < 0. 05; *** p< 0.01

4. CONCLUSIONS REMARKS

When Dr. Muhammad Yunus and his micro-credit Grameen Bank won the 2006 Nobel Peace Prize, many people considered this model as a real example of how very poor people from a very poor country, Bangladesh, use entrepreneurial activities to eradicate extreme poverty situations. In this chapter we take up some elements in the

discussion concerning the relationship between poverty, human development and entrepreneurship activities. In doing so, we follow Naudé (2009) who states ‘...not only can the entrepreneur be formally modeled to address issues of concern to development economics, such as structural change and growth, inequality and poverty, and market failures, but that such modeling importantly extends not only to our understanding of the development process but also of the accurate role of the entrepreneur in that process’.

Our empirical approach using GEM data reconfirm the well-known statement that less developed countries have more ‘entrepreneurs’ and this relationship is more consistently related with necessity-based entrepreneurship. This last type of entrepreneurship is still highly present in many developing countries and, as we have empirically shown, it is related to the countries’ human development levels and income inequalities.

Necessity-based entrepreneurs can be important to a country’s development because they represent a form of human resourcefulness (Couyoumdjian and Larroulet, 2009) and many of them capture the sense of entrepreneurial spirit. This is confirmed by our results that indicate that entrepreneurship activities have a positive effect on human development (i.e. in reducing poverty). This result is an important contribution to the discussion as to whether or not entrepreneurship is truly relevant for less developed countries. We believe that entrepreneurship is not only relevant for these economies, but it is also necessary.

Our empirical findings complement other works that establish that entrepreneurship activities are more relevant in highly developed countries (Tang and

Koveos, 2004; van Stel, Carree, and Thurik, 2005; Wennekers et al., 2005; Acs and Amorós, 2008). We have also shown that entrepreneurial activities can contribute to a better performance of the social and economic development in poor and less developed countries. Obviously, entrepreneurship activities do not constitute the ‘panacea’ for poor nations because developing economies must also work to achieve solutions to structural problems like stability, basic infrastructure, education and health. This implies stable regulatory and macroeconomic conditions that help new business creation (Amorós and Cristi, 2008).

Our results can also help to rethink some policy implications. Wennekers et al. (2005: 306) point out that ‘low-income nations should not consider the promotion of new business as a top priority on their policy agenda’ and Shane (2009) remarks that entrepreneurship policy is not a good policy. Probably this paradoxical situation still is found in scholars, practitioners and policy makers’ debates. Our results, using GEM data, offer some evidence to reconsider the great importance that entrepreneurship has to poor and for countries’ development goals. This is so up to the point that we remark that the role of entrepreneurship could be crucial to help millions of poor people who live in underdeveloped nations (Powel, 2008).

Future research using more specific micro-data from less developed countries can help to better understand how important entrepreneurship for poverty alleviation is. GEM project is moving in this direction by increasing on a year by year basis the number of sampled countries: not only the more developed ones, but also incorporating countries from less developed regions such as Africa, Asia and Latin America.

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