

THE INFLUENCE OF VALUES AND THE CULTURE ON ENTREPRENEURIAL ACTIVITY: AN ANALYSIS OF THE DIFFERENCE BETWEEN COUNTRIES WITH DIFFERENT DEVELOPMENT LEVELS

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1. Introduction

Firm creation is a complex phenomenon that involves a great variety of contexts and factors. The variety of definitions of entrepreneurship reflects this complexity. Within the analysis of entrepreneurial activity, the study of new firm creation has had an important place, due above all to the importance of new firm creation in economic development and renovation as well as in the generation of employment (Tödtling and Wanzenböck, 2003).

Researchers who compare entrepreneurship between countries find differences in the levels of entrepreneurial activity, and that these differences remain stable over time (Uhlaner and Thurik, 2007; Van Stel et al., 2005).

In the past, most researchers trying to explain the different levels of entrepreneurial activity carried out a comparative analysis of the economic conditions in different countries (Blau, 1987; Blanchflower and Oswald, 1994; Blanchflower, 2000; Evans and Leighton, 1989; Meager, 1992; Acs et al., 1994; Audretsch et al., 2002; Sternberg and Wennekers, 2005). But economic variables can only explain some of the differences in the entrepreneurial activity levels, leaving a significant proportion unexplained. This encouraged a small number of researchers to analyse cultural factors as possible determinants of these differences (Hofstede et al., 2004). But policy-makers aiming to stimulate entrepreneurial activity should consider these factors. It is important to know which factors have an effect, with what strength, and which are susceptible to political measures.

Cultural characteristics have proved to be very stable, changing very slowly over time (Hofstede, 2001).

The objective of the current work is to determine whether values and motivations explain the entrepreneurial activity levels (as measured by

total entrepreneurial activity, TEA) of countries differently depending on their level of development.

Why are more firms created in some countries than in others? This question is still important today. The current work considers socio-psychological variables to try to explain the differences in entrepreneurial activity levels between countries.

We use aggregate measures of achievement motivation, independence motivation, internal control, and so on. We also take into account economic and social factors to investigate the role of motivation and values in predicting entrepreneurial activity. In particular, per-capita income is used to control for the economic effects, and life satisfaction is used to control for social effects. The data to test the hypotheses comes from 28 countries participating in the Global Entrepreneurship Monitor (GEM) project, the World Values Survey (WVS), the Global Leadership and Organizational Behavior Effectiveness (GLOBE) research programme, and other sources.

The findings of this work confirm that the country's development level moderates the relation between the culture and the entrepreneurial activity, and also that achievement motivation is a key factor in the entrepreneurial activity level. The same values underlie all the most entrepreneurial countries regardless of their level of economic development or culture.

This work is organised as follows. The next two sections look at the theoretical foundations used to formulate the hypotheses. The following section describes the research methodology. The next section presents the results, and the work ends with the conclusions, implications and limitations of the study.

2. Culture, economic development level and entrepreneurial activity

The culture is that complex, multi-faceted reality that includes knowledge, beliefs, art, morality, the law, customs, and all the other abilities humans acquire as members of a particular society. Culture has been defined as a set of shared values, beliefs, and expected behaviours (Hayton et al., 2002). Typically cultural values are thought to be formed in the early years of a person's life and tend to be "programmed" in individuals. The resulting behaviour patterns are consistent with the person's cultural environment and remain stable over time (Hofstede, 1980; Muller and Thomas, 2001).

In recent years researchers have found significant relations between culture and firm creation (George and Zahra, 2002). Entrepreneurship researchers have used different dimensions to measure the culture in their work (Mitchell et al., 2000), but Hofstede's (1980) conceptualisation of cultural values has been the most widely used. This author shows that less variation exists in certain values and beliefs between people from the same

country than between people from different countries. In his influential study, Hofstede (1980) finds cultural differences between countries along four dimensions: power distance, uncertainty avoidance, individualism/collectivism, and orientation towards masculinity or femininity. He introduces a fifth dimension in a subsequent work – long-term orientation (Franke et al., 1991).

Of these five dimensions that describe the culture, individualism/collectivism constitutes the “deep structure” of cultural differences, and this may be why this dimension is the most widely studied (Triandis and Suh, 2002). The current work uses this variable as an indicator of the country’s culture. Briefly, individualism/collectivism measures a society’s tendency to value either the individual or the group, with individualism and collectivism at the two extremes of this dimension.

In an individualist culture people act motivated by their own interest and in pursuit of their own personal objectives. Hofstede (2001: 221) defines individualism as emotional independence from “groups, organizations, or other collectivities”. Collectivism, in contrast, implies subordinating personal interests to the objectives of the group¹. It is based on cooperation and harmony within the group. People are integrated in strong, cohesioned groups from birth, which continue to protect the members throughout their lives in exchange for unconditional loyalty. In collectivist cultures people feel they are an indispensable part of the group, and are unconcerned about their own benefit or whether other group members might exploit their efforts in their own benefit.

The differences between these two positions are obvious at many levels: in the family, personality and behaviour, language and group identity, and in school education (Hofstede, 2001).

What is the relation between national culture and entrepreneurial activity levels? Authors have argued that more-individualist cultures behave more entrepreneurially than more-collectivist cultures (Hayton et al., 2002; Wennekers et al., 2002; Noorderhaven et al., 2004). But Baum et al. (1993) supports the opposing thesis that it is not high individualism that stimulates people to set up their own business, but low individualism (i.e., collectivism). Individualist cultures tend to be associated with more highly-developed economies, where people do what they want in the way they want. Both entrepreneurs and non-entrepreneurs can satisfy the needs that motivate them in this common entrepreneurial environment. In other words, people with “entrepreneurial spirit” do not need to create their own business, since they can find the conditions in which to develop their entre-

¹ In collectivist cultures the individual’s family constitutes the group. Families tend to be very large, and include not only the nuclear family of parents and children, but also cousins, uncles and aunts, nephews and nieces, etc.

preneurial spirit in the firms where they are already working. In contrast, in collectivist societies, which are associated with a lower level of economic development, these opportunities simply do not exist. The firms are small, and the number of large firms or multinationals is also small. In these conditions, it is harder for people to satisfy their entrepreneurial spirit within existing firms. Consequently, people with entrepreneurial needs will be more inclined to create their own business since they cannot satisfy their needs within the current structures.

Other authors examine other cultural dimensions, for example post-materialism, a term which Inglehart (1977) coined to describe the level at which a society places its non-material objectives, such as personal development and self-esteem, over material security. Uhlener and Thurik (2007) investigate the role of post-materialism when they try to explain differences in entrepreneurial activity levels, and their results provide support for the view that the development level influences the culture and can modify motivations.

The post-materialism hypothesis describes the transformation of many countries from a culture dominated by a materialist orientation to one that has a higher proportion of the population pursuing non-materialist life goals. This hypothesis is based on the socialisation and scarcity hypotheses. The socialisation hypothesis holds that people's values reflect the prevailing circumstances during their formative years. The scarcity hypothesis holds that people's priorities reflect their socio-economic circumstances, and that people value relatively scarce resources more than common ones.

Combining these two hypotheses, the conclusion is that the economic security achieved by some (post-industrial and post-materialist) societies leads their members to place higher priority on non-material objectives such as esteem, self-realisation and quality of life (post-materialist values). These are often called "higher-order needs" in Maslow's work (Maslow, 1954). Maslow's hierarchy of needs makes a basic distinction between the "material" needs of sustenance and physiological security, and the non-material (or psychological) needs such as esteem, self-expression and aesthetic satisfaction. People stress economic objectives less in countries where a post-materialist climate predominates than in materialist countries, which is consistent with Inglehart's (1997) description of post-materialist cultures as "economic under-achievers".

According to Inglehart (1977), modernisation theory implies that economic development is strongly linked with given cultural patterns, either because economic development produces specific types of culture, or because certain cultural patterns produce economic development. In short, modernisation theory not only implies that coherent cultural patterns exist, but also that these patterns are related to the level of economic development of a particular society. Inglehart (2003) concludes that democratic

institutions do not automatically produce a culture that values self-expression. Rather, economic development should apparently precede social and cultural changes.

On the other hand, solid evidence exists that post-materialist values emerge when a society has reached relatively high levels of economic security. If this is right, then economic change shapes the culture (Inglehart, 2000).

All this leads to the first hypothesis:

Hypothesis 1: The country's level of development (per-capita income) moderates the relation between the culture (individualist/collectivist) and the entrepreneurial activity level (TEA).

Confirming this hypothesis would mean that a country's development level modifies the relation between individualist/collectivist culture and entrepreneurial activity. If policy-makers do not take this effect into account they could come to the wrong conclusions about the best policies to encourage entrepreneurship in a particular country.

3. Level of economic development, entrepreneurial activity and motivation

Inglehart and Welzel (2005) point out that people's values and fundamental beliefs differ substantially between advanced societies and less-developed societies. Socio-economic development has a profound influence on what people want and do, but the cultural inheritance of a society continues to shape its dominant beliefs and motivations.

At the psychological level, people are thought to attribute particular value to their unmet needs, and it is these needs that drive their behaviour. Conceivably then, people in poorer societies will particularly value economic performance, while people in wealthier societies will prioritise non-economic aspects.

Authors have argued that entrepreneurs are motivated, at least partially, by material gain, achievement and autonomy (Brockhaus and Horowitz, 1986; Gartner, 1988), which the work of a number of authors supports (e.g., McGrath et al., 1992b; Blais and Toulouse, 1990; Robichaud et al., 2001).

Most research into the motivational profile of the entrepreneur is based on McClelland's (1961) and Miner's (1965) work on achievement motivation. McClelland (1961) was the first to point out that a high achievement motivation, characterised by the desire to do things well in order to obtain a feeling of success or achievement, predisposes the individual to be an entrepreneur, since seeking solutions to problems and persevering in this

behaviour provides a feeling of success or self-achievement that is difficult to find in other activities. Miner (1980), following on from McClelland, developed a model that includes self-achievement, defined as the desire to achieve, via one's own abilities and personal efforts, satisfaction from the enhanced self-esteem that is a result of the achievement.

Both McClelland's and Miner's positions predict higher levels of achievement motivation among entrepreneurs than in the rest of the population. On the other hand, in principle, we should also expect that in societies that value achievement most there should be more entrepreneurs. Nevertheless, some studies have failed to demonstrate this relation empirically, and this line of research has to some extent been put aside.

In recent research, some authors argue that the lack of empirical evidence supporting the predicted relation in all cases may be due to the use of different measurement systems, or samples from different countries, since the motivations can be affected by the country's culture. For example, the individualist cultural orientation stresses independence, while the collectivist cultural orientation stresses belonging to the group (Hofstede, 1980). This suggests that there are cultural differences in motivations and entrepreneurial activity. It is still not clear today how the culture affects motivation, and we cannot say for sure that the relation between achievement motivation and being an entrepreneur is universal.

Erez and Early (1993) discuss the impact of culture on motivations, and indicate that the culture provides a cognitive framework that attributes meaning and values to motivating variables, and to people's choices, commitments and standards of behaviour. Baum et al. (1993) show that the entrepreneurs of various cultures show differences in their motivations. More specifically, they find that the entrepreneurs from the highly collectivist Israeli culture show high needs for achievement and autonomy (motivations traditionally attributed to entrepreneurs, as mentioned above), but also a high need for affiliation, which distinguishes them from the entrepreneurs from the US, a highly individualist culture.

All this leads to the following hypotheses:

Hypothesis 2: In developing countries economic motivations drive entrepreneurial activity.

Hypothesis 3: In developed countries non-economic motivations drive entrepreneurial activity.

Hypothesis 4: In countries with unmet economic needs people value economic performance.

Hypothesis 5: In countries where the economic needs are satisfied people value mainly non-economic factors.

Hypothesis 6: The factors (values and motivations) that explain the entrepreneurial activity level (TEA) depend on the country's level of development.

4. Methodology

This section presents the model and data used in the analysis.

Sample

The data used in this work come from different information sources. The TEA for each country comes from the GEM project²; the data on the development level of the countries and their per-capita income come from the World Bank³; the data on the individualism level of the countries are taken from Hofstede (1980; 2001)⁴; and the data on the values and motivations of the societies come from the World Values Survey⁵ and the Global Leadership and Organizational Behavior Effectiveness (GLOBE) research programme⁶.

We needed to use data from different databases, so this work uses mean values for each country's TEA and per-capita income level, meaning that complete data is available for a sample of 28 countries.

Variables

- Entrepreneurial activity level of each country

The GEM project provides an indicator of the country's entrepreneurial activity level: the total entrepreneurial activity (TEA) index. This index measures the proportion of the adult population (between 18 and 64) in the country who are actively involved in setting up a new business or own or run a business that is under 42 months old (Reynolds et al., 2002).

The variable TEA measures the mean TEA score of each country that participates in at least one GEM edition between 1999 and 2007 and for which information about the rest of the variables analysed here is also available (28 countries in total).

- Individualist/collectivist culture of each country

The variable IND takes values of between 0 and 100. Countries with an individualist culture score highly on this index, while those with collectivist cultures obtain low scores.

- Per-capita income of each country

The variable PCI measures the mean per-capita income of each of the 28 countries in the period 1999-2007 in US dollars.

² In <http://www.gemconsortium.org>

³ In <http://web.worldbank.org>

⁴ In http://www.geert-hofstede.com/hofstede_dimensions.php and info@itim.org

⁵ In <http://www.worldvaluessurvey.org>

⁶ In House et al. (2004).

- *Achievement motivation*

The World Values Survey examines the qualities people think should be taught to children. The survey asks representative samples of the population of 53 societies the following question: “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?” The respondents can choose at most five qualities. This list includes qualities reflecting the importance attributed to “thrift, saving money and things”, and “determination and perseverance”.

The variable ACHIEVE measures the proportion of people in each country who stress the above qualities.

- *Independence motivation*

Again using data from the World Values Survey, the variable INDEP measures the proportion of people in each country who consider that independence or autonomy should be one of the five qualities that children should be taught. Societies that favour this behaviour will have more people with a strong need for autonomy, people who prefer to manage themselves, people who are unconcerned about the rules or about what others think, or people who prefer to decide for themselves. This behaviour is typical of the entrepreneur.

- *Internal control*

Again using data from the World Values Survey, the variable INT_CONTROL measures how much freedom of choice and control a person feels they have over the way their life turns out.

- *Value attributed to performance orientation*

The GLOBE measurement scales provide a direct measure of a society's values (how the society should be). To measure what each society values, this work uses GLOBE measures for the three variables, this one and the following two, that are the most closely related to entrepreneurial activity.

Performance orientation measures the extent to which a community promotes and rewards innovation, high standards and performance improvements.

The variable PERFORM measures the extent to which people value the rewarding of performance improvements and the establishment of challenging objectives in each country.

- *Value attributed to humane orientation*

House et al. (2004) point out that altruism, benevolence, kindness, love, and generosity are important factors and motivators that guide people's behaviour in societies with a strong humane orientation. In such societies,

the need for belonging or affiliation is the basis of the dominant motivation, rather than self-fulfilment, pleasure, material possessions or power.

The variable HUMANE measures the value the society attributes to this behaviour.

- Value attributed to the group

GLOBE provides measures about specific aspects of societies' collectivist dimension, which is an element that differentiates societies. What GLOBE calls the "institutional collectivism" construct is measured using four questions (House et al., 2004) concerning the extent to which the institutions at the society level encourage and reward collective action. Specifically, the construct measures the extent to which the group should be supported even at the expense of personal objectives. It reflects whether the group cohesion or the individual should be the most valued in the society. The variable INSTIT measures this orientation.

- Subjective well-being

Following Uhlaner and Thurik (2007), the current authors consider that life satisfaction is a useful control variable with which to capture the effect of dissatisfaction on firm creation.

From World Values Survey data, the variable WELL-BEING measures the mean between (1) the percentage of people in each country who consider themselves "very happy" or "happy" less the percentage who consider themselves "not very happy" or "unhappy", and (2) the percentage who choose between 7 and 10 less the percentage who choose between 1 and 4 on a scale of 1 to 10 (1=completely dissatisfied with one's life, and 10=completely satisfied with one's life).

5. Analysis and results

In order to test the proposed hypotheses, the analysis takes place in two stages. In the first stage we test Hypothesis 1, and in the second, we test the remaining hypotheses.

The first stage is to analyse the moderating effect of the country's level of development. We assume that the level of entrepreneurial activity is determined by the interaction between the individualist/collectivist culture and the development level (measured by per-capita income level). The most usual method of determining the form of the moderation is to use moderated regression analysis, or MRA (Sharma et al., 1981). This technique requires the introduction of an interaction term that is the product of the predictor variable and the hypothetical moderating variable. This term should be significant and non-zero. Here, as in the majority of cases,

the interaction term is strongly correlated with its constituent variables, a situation that can produce multicollinearity and unstable estimations in the regression. We use Aiken and West’s (1991) procedure to resolve this problem. They recalculate the original variables (IND and PCI), by subtracting the mean of each variable from the values of each observation. The estimated coefficients for the equations without the interaction term do not change. Table 1 shows that the interaction term – calculated by multiplying the two recalculated direct variables – has a very small correlation with the original variables.

Table 1 shows the correlations between the variables used to analyse the interaction effect of income level, along with the means of the variables.

Tab. 1 - Correlations

	Variable	Mean	N	(1)	(2)	(3)	(4)
(1)	TEA	8.29	29	1			
(2)	IND	52.1	29	-0.50**	1		
(3)	PCI	\$20,708	29	-0.66**	0.66**	1	
(4)	IND x PCI			0.41*	0.27	0.24	1

*Correlation significant at 0.05 level (2-tail).

**Correlation significant at 0.01 level (2-tail).

Table 2 includes the results of the regression corresponding to the first stage of the analysis, which investigates the moderating nature of the income level.

Tab. 2 - Regression to test moderating nature of income level

DEPENDENT VARIABLE	TEA
VARIABLES	Coefficient
Constant	15.24***
IND	-0.06**
PCI	-2.7x10 ⁻⁴ **
IND x PCI	1.4x10 ⁻⁵ ***
R	0.89
R ²	0.79
adj. R ²	0.76***
F	30.68***

** Significant at 0.05 level

*** Significant at 0.001 level

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The results of the analysis (see Table 2) confirm the moderating nature of income level in the relation between IND and TEA. As expected, the interaction term (IND x PCI) has a significant, positive effect on TEA, which means that income level can be considered a moderator variable (Baron and Kenny, 1986). Thus the relation between entrepreneurial activity and culture changes sign depending on the country's development level.

After confirming the moderating nature of income level, the second stage of the analysis aims to show that the individualist/collectivist culture affects the entrepreneurial activity rate differently depending on the country's development level and on the role of the motivations and values in each situation. For this, following the World Bank classification, the sample must be segmented into two groups of countries (medium or low per-capita income, high per-capita income). The group of medium- or low-income countries contains 11 countries, while the group of high-income countries contains 17, and the two groups will conceivably behave differently. In order to determine whether motivations and values differ depending on the development level, we carry out two regressions (one for each development level), where TEA is the dependent variable and the motivations, values and life satisfaction are the independent variables. Table 3 shows the correlations between the variables considered and the mean and standard deviation of each, for the two groups.

Tab. 3 - Correlations by development level

Countries with medium or low income levels (N=11)												
	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1.	TEA	14.77	7.95	1								
2.	IND	33.26	17.96	-0.696**	1							
3.	ACHIEVE	-19.04	40.30	-0.435	0.228	1						
4.	INDEP	49.68	20.38	-0.042	-0.013	0.477	1					
5.	INT_CONTROL	39.16	24.11	0.527*	-0.528*	-0.412	0.147	1				
6.	PERFORM	5.99	0.33	0.563*	-0.219	-0.246	-0.057	0.502	1			
7.	HUMANE	5.38	0.18	-0.313	0.260	0.280	-0.298	-0.436	0.081	1		
8.	INSTIT	4.91	0.49	0.642**	-0.565*	-0.645*	-0.241	0.440	0.447	0.051	1	
9.	WELL-BEING	43.51	21.38	0.322	-0.422	-0.433	0.108	0.755**	0.548	-0.620*	0.713**	1
Countries with high income levels (N=17)												
	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1.	TEA	6.74	3.19	1								
2.	IND	58.47	22.88	0.2	1							
3.	ACHIEVE	25.32	30.77	-0.186	-0.32	1						
4.	INDEP	58.97	16.73	0.019	-0.069	0.435	1					

5.	INT_CONTROL	56.22	13.88	0.436*	0.315	-0.372	0.396	1				
6.	PERFORM	5.88	0.28	0.274	0.029	-0.365	-0.37	0.378	1			
7.	HUMANE	5.46	0.28	-0.386	-0.02	0.012	0.111	-0.135	0.008	1		
8.	INSTIT	4.53	0.44	-0.273	-0.264	-0.32	-0.644**	-0.336	0.191	-0.048	1	
9.	WELL-BEING	67.96	19.18	0.267	0.585**	-0.309	0.184	0.611**	0.126	0.343	-0.212	1

**Correlation significant at 0.01 level (2-tail)

*Correlation significant at 0.05 level (2-tail)

Before the estimation of these regressions we carry out a one-factor ANOVA (the factor being the group to which the country belongs, developed or developing countries) to analyse if significant differences exist in the variables between the two groups of countries.

Tab. 4 - ANOVA for study of differences

		N	Mean	SD	F
TEA	DEVELOPING	17	13.91	7.16	22.36***
	DEVELOPED	24	6.28	2.88	
IND	DEVELOPING	17	34.59	20.33	12.46***
	DEVELOPED	24	59.42	23.39	
ACHIVE	DEVELOPING	14	29.69	21.81	3.37#
	DEVELOPED	23	43.95	23.54	
INDEP	DEVELOPING	11	51.16	21.32	1.24
	DEVELOPED	18	59.05	16.61	
CONTROL	DEVELOPING	12	35.18	26.83	8.36**
	DEVELOPED	20	56.16	14.37	
PERFORM	DEVELOPING	17	5.99	0.33	1.31
	DEVELOPED	24	5.88	0.28	
HUMANE	DEVELOPING	17	5.38	0.19	0.99
	DEVELOPED	22	5.46	0.29	
INSTIT	DEVELOPING	17	4.91	0.49	5.86**
	DEVELOPED	24	4.56	0.43	
WELL_BEING	DEVELOPING	12	43.62	24.37	8.49**
	DEVELOPED	20	66.66	19.91	

$p < 0,10$; * $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$

Table 4 shows that significant differences exist between the two groups of countries: in the entrepreneurial activity levels (TEA is lower in developed countries); in the level of individualism (wealthier countries are more individualistic); in the level of achievement orientation (the achievement

motivation is higher in developed countries); in internal control (more control is perceived in developed countries); and in the value attributed to the group (this is lower in more-individualistic cultures). The results also show significant differences in the level of perceived well-being. As expected, this variable is higher in developed countries.

No significant differences are found between the two groups of countries in the variables INDEP, PERFORM, or HUMANE.

We now estimate the two regressions. Table 5 shows the results⁷. Model 1 shows the results for the developing countries, and the regression is statistically significant with an adjusted R² of 0.78. In other words, 78% of the variation in entrepreneurial activity is explained by the variables in the model that are significant in explaining these countries' entrepreneurial activity levels.

Tab. 5 - Comparison of multiple regressions by development level

	Model 1	Model 2
	Countries with medium or low income levels	Countries with high income levels
Constant	-51.41**	-12.18
IND		
ACHIEVE	0.24**	-0.05*
INDEP		
INT_CONTROL	0.12*	0.13*
PERFORM		
HUMANE		
INSTIT	10.72**	2.69*
WELL-BEING		
R	0.92	0.73
R2	0.84	0.53
adj. R2	0.78	0.41
F	12.64*	4.18*

* $p < 0.05$; ** $p < 0.01$

⁷ We use the stepwise method to build the regression equations. This process begins by including as first independent variable the one whose correlation coefficient with the dependent variable is the highest in absolute terms, providing the regression coefficient corresponding to that variable has a lower significance level than the established figure. The second step introduces into the equation the variable with the highest partial correlation with the dependent variable, taking into account the tolerance, and providing it complies with the inclusion criterion. If in any of the steps the regression coefficient of one of the variables already introduced into the equation has a higher significance than the established figure, that variable is eliminated.

The variables ACHIEVE and INT_CONTROL are significant and positively related to TEA. Both achievement motivation and internal control explain entrepreneurial activity. Among the variables measuring what a society values, only INSTIT appears in Model 1 and is significant.

Model 2 presents the results of the regression for the developed countries (Table 5). The regression is statistically significant with an adjusted R^2 of 0.41. In other words, 41% of the variation in the entrepreneurial activity is explained by the variables in the model that are significant in explaining these countries' entrepreneurial activity levels.

In these countries too, the variables ACHIEVE and INT_CONTROL are significant. A greater internal control explains higher levels of TEA. The sign of the variable ACHIEVE is negative, which would be contradictory unless the relation between achievement motivation and entrepreneurial activity is non-linear. Table 4 shows that the achievement orientation is higher in developed countries than in developing countries, but the TEA is lower. This result may be indicating that an inverted U-shaped relation exists between achievement motivation and TEA.

With regard to the variables measuring what a society values, only INSTIT appears in Model 2 and is significant.

Summarising, the country's development level moderates the relation between culture and entrepreneurial activity. This leads us to study the role of motivation and values in function of the country's development level. This analysis shows that achievement motivation is the most important characteristic of entrepreneurial behaviour. In developing countries a higher achievement motivation favours firm creation. In developing countries with a higher achievement motivation, the entrepreneurial activity is higher. In developed countries achievement motivation plays a critical role in explaining TEA, but the negative sign suggests that the right amount of achievement motivation must exist in order to favour entrepreneurial activity.

With regard to the values, we expected that in low-income countries people would particularly value the performance, which represents an unmet need, and that in high-income countries this would not be the case. In fact the results show that more-entrepreneurial societies share a common system of values that is characterised by a strong focus on collective interests. This value is related to extra-personal needs (of inclusion or affiliation) and not intra-personal needs (such as achievement motivation).

Finally, we expected that the values and motivations that explain entrepreneurial activity would depend on the country's development level. But the results show that the variables explaining entrepreneurial activity are the same in developing and developed countries, with the exception of achievement motivation, for which the sign of the effect changes.

In short, the results obtained provide support for Hypothesis 1, whi-

ch postulates that the country's development level moderates the relation between culture and the entrepreneurial activity level. Hypothesis 2 is also confirmed: the results show that achievement motivation (the proportion of each country's population that stresses thrift, saving money and things, and determination and perseverance) is significant in developing countries.

Hypothesis 3 is accepted, since the achievement motivation variable is significant and the sign of the coefficient is negative. Hence achievement motivation does not favour entrepreneurial activity.

The results lead to reject Hypothesis 4 and accept Hypothesis 5.

Finally, Hypothesis 6 is rejected, since the results show that the values that explain entrepreneurial activity are the same in developed and developing countries. This result means that more entrepreneurial societies share a common system of values that favour and reward collective action.

6. Conclusions and implications

This work analyses the determinants of entrepreneurial activity. Much of the past research in this area focuses on economic factors. The results of the current study support the idea that motivations and values provide alternative explanations for the differences in entrepreneurial activity rates between countries. One implication of the current results is that the efficacy of measures to boost entrepreneurial activity may be partially limited by cultural factors beyond policy-makers' control.

In more-entrepreneurial societies, achievement motivation is linked to entrepreneurial activity, as is internal control. Analysis of the differences between developing and developed countries with respect to motivations, values and well-being shows that significant differences exist in the levels of achievement motivation and internal control. In contrast, this work does not find significant differences in the value attributed to economic performance, or in human orientation, although it does find significant differences in the value a society attributes to belonging to the group (affiliation).

The search for independence has not proved significant in explaining countries' entrepreneurial activity levels.

These results lead us to recommend that policies designed to support firm creation should favour the promotion of the values of affiliation or inclusion.

Despite the results obtained, this work suffers from a number of limitations. First, we study a group of countries from a number of continents with different cultures and development levels, but the sample includes only 28 countries. This limits the prescriptive power of the results, above all when the sample is segmented into two groups. Nevertheless, the results should not be ignored for that reason, since the relations confirmed

between motivations and values are relevant for entrepreneurial initiatives. Second, we have had some problems due to the use of different databases covering different time periods, which has limited the number of countries participating in the study to those for which they had information from the same time period. On the other hand, the measures of the individualist/collectivist culture come from before this period, which could merit criticism, although the fact that cultural values are considered constant or almost constant elements mitigates this problem. In other words, cultural values endure (McGrath et al., 1992a).

The results obtained confirm the relevance of motivations and values in explaining countries' entrepreneurial activity levels.

The findings indirectly suggest the need to examine achievement motivation in more depth, and its possible non-linear (inverted U-shaped) relation with entrepreneurial activity.

Future research in this area should try to confirm the stability of the relations found here in a broader sample of countries and using longitudinal data.

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Abstract

This paper tries to explain the considerable differences between countries in the Total Entrepreneurial Activity (TEA) index, by analysing the values and motivations that drive entrepreneurial activity. Moreover, we have found, and taken into account, that the country's economic development conditions the appearance of personal values and motivations. Researchers have traditionally considered the needs for achievement and independence as the main drivers of the individual's entrepreneurial behaviour. But these elements have not often been considered at the country level or in relation to the TEA index. The main argument of the current work is based on the premise that a country's development level implies both the type of needs that remain unsatisfied and what the society values. Unsatisfied needs are determinant motivating elements of behaviour according to Maslow, and they explain some of the differences in entrepreneurial activity levels. We use aggregate measures of the value accorded to money, security, affiliation, achievement, and prestige, since these variables have been considered relevant in explaining people's entrepreneurial behaviour. We also consider a number of economic and social factors as control variables. The data comes from 28 countries participating in the Global Entrepreneurship Monitor (GEM) project, the World Values Survey (WVS), and the Global Leadership and Organisational Behaviour Effectiveness (GLOBE) research programme. We have also used data about these countries from the World Bank. In order to test the proposed hypotheses we used the regression analysis. The results obtained confirm the relevance of motivations and values in explaining countries' entrepreneurial activity levels. The findings indirectly suggest the need to examine achievement motivation in more depth, and its possible non-linear (inverted U-shaped) relation with entrepreneurial activity.

Riassunto

Partendo dalla constatazione che esistono significative differenze tra paesi in termini di propensione all'imprenditorialità e tassi di creazione di nuove imprese, questo lavoro si propone di analizzare come i valori e le motivazioni umane, che sono alla base della decisione di diventare imprenditore, siano influenzate dal livello di sviluppo economico nazionale.

A tal fine, gli autori sviluppano un modello di analisi che prende in considerazione, oltre ai fattori motivazionali già evidenziati in letteratura (quali bisogno di realizzazione, senso di affiliazione, ricerca di potere e controllo, ecc.), anche fattori sociali ed economici, per poi testarlo sui dati di 28 paesi.

I risultati confermano che i valori e le motivazioni umane costituiscono un importante fattore esplicativo dei diversi tassi di imprenditorialità esistenti a livello internazionale e suggeriscono di approfondire, in particolare, la relazione esistente tra bisogno di realizzazione e propensione imprenditoriale.

JEL classification: Z1, M13, O11, O57, L26

Keywords (Parole chiave): Cultural Economics; Economic Sociology; Economic Anthropology; New Firms; Startups; Macroeconomic Analyses of Economic Development; Comparative Studies of Countries; Entrepreneurship.