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Self-Employment out of Dissatisfaction

Industry-dynamics, small firms and entrepreneurship

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Culture's Role in Entrepreneurship;
Self-Employment out of Dissatisfaction*

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Abstract

This paper studies the influence of cultural and economic variables on differences in the level of entrepreneurship hi more than twenty Western nations and Japan, for the period 1974-1994.

We combine data on entrepreneurial and economic variables with data on cultural variables. Firot, we consider cross-sectional relationships between the cultural variables and entrepreneurship. The results yield evidence that, across nations, dissatisfaction with society and with life in general are the main determinants of entrepreneurship. Countries where people are less satisfied have more entrepreneurs. These are often societies with larger power distance, stronger uncertainty avoidance, more bureaucracy and corruption, and which are relatively poor.

Subsequently, we carry out regressions including economic and dissatisfaction variables for which time series are available. There are indications for a U-shaped relationship between prosperity and entrepreneurship. Furthermore, unemployment is consistently found to be a significant push factor for self-employment. However, dissatisfaction with life and with society come out again as main determinants of entrepreneurship across nations, even stronger than the economic variables. Finally, by repeating the regressions for several cultural country clusterings, we show that neglecting the role of the cultural context creates an incorrect picture of the influence of the economic determinants on entrepreneurship.

INTRODUCTION

Importance of Entrepreneurship

Economic growth is a key issue both in economic policy making and in economic research. In Europe in particular, the interest in economic growth is widespread because of the persistently high levels of unemployment. Europe is bogg*»H down in stagnant growth and high unemployment. About eleven percent of the work force hi the European Union was unemployed in 1997, ranging from 3 percent in Luxembourg and 6 percent in the Netherlands, to 12.5 percent in FVance and even more than 20 percent in Spain. This high unemployment coupled with stagnant growth in Europe has triggered a plea by policy makers for rethinking the policy approach that ushered in European prosperity during the post-war era.

There is a general feeling in Europe that stimulating entrepreneurship helps fighting unemployment (see, for instance, the Joint Employment Report 1997 of the European Commission). This feeling provides the justification for researching three questions: What is entrepreneurship?, Where does entrepreneurship come from?, and What does it lead to? The present paper deals with the second question by analysing the influence of cultural, social, and economic variables on differences in the level of entrepreneurship between more than twenty Western nations and Japan for the period 1974 through 1994. For this analysis a new and unique database has been set up.

In most OECD countries the first decades after World War II showed historically high rates of economic growth. Following the first oil crisis in 1973 a period of *stagflation* set in, characterised by a combination of inflation and slow growth. Since the mid eighties economic growth in most countries has picked up again, but on the whole at a rate too slow to guarantee an acceptable level of unemployment. In the sixties and seventies, academic and political interest in many Western countries gradually turned to matters of demand management and income equality, whereas the interest in the causes of economic growth waned. Neo-classical theory explained economic growth by accumulation of production factors and by exogenous technological change. Mainstream economics, however, did not show great interest in the ultimate causes underlying long-term factor accumulation and technological development.

In the eighties, stagflation and high unemployment caused a renewed interest in supply side economics and, simultaneously, in underlying factors. As clearly exposed by North and Thomas (1973), Olson (1982), and more recently by Van de Klundert (1997), the institutional foundations and cultural factors of an economy are among the most prominent of these ultimate causes. These authors focus attention on factors such as incentives, regulation of markets, and social rigidities. Somewhat understated in their analysis, however, is the primal role of the economic agents (entrepreneurs) who link the institutions on the micro level to the economic outcome on the macro level (see for instance Wennekers, Thurik and Buis, 1997). In spite of a growing attention in research, presently still little is known about entrepreneurship. How and why for instance do individuals decide to start an enterprise themselves? Which role do institutional and cultural factors play in this decision process? And how exactly do these factors frame the decisions of the millions of entrepreneurs in small firms and of entrepreneurial managers working within large companies?

Determinants of Entrepreneurship

One can investigate the determinants stimulating or hampering entrepreneurship at many levels. At an individual level, one can examine the motives of people for turning into self-employment. Furthermore, one can investigate how the market, regulatory and organisational environment fosters entrepreneurial activity. One can also consider differences between countries and examine whether cultural factors are involved. The latter is the subject of this paper.

Why do some countries have more entrepreneurs than others? Many researchers have addressed this question and most of them have focused on economic explanations, thereby underexposing the role of culture. Some references in the literature havfi made attempts to study culture's influence, but mostly without much empirical foundation.

In the present paper we aim at supplementing the research of the determinants of entrepreneurship on the country level by linking three bodies of h'terature and by subsequently combhling different international databases into a new and unique dataset. Firstly, we consider the traditional economic explanation of levels of entrepreneurship. Factors like per capita income, unemployment and profit opportunities then play a role. Secondly, we embed our study hi the literature on the role of cultural traits such as individualism, power distance and uncertainty avoidance hi explaining people's motives and actions within the economic arena (see Hofstede, 1980). Finally, from the

literature on the examination of motives for self-employment, we derive dissatisfaction as a major driving force.

' The following model is set up to test our hypotheses. First, we carry out a simple analysis by r.onsiderine correlations across countries between entrepreneurship and cultural traits, and between entrepreneurship and issues of dissatisfaction. From this, we obtain a first inkling ol the role of culture and dissatisfaction in levels of self-employment. Subsequently, we carry out regressions on time-series data of entrepreneurship, including relevant economic and dissatisfaction variables. Thus we can distinguish the role of each explaining variable, and see which variable explains national differences in entrepreneurial activity best. (Cultural variables are not directly included hi the regressions, since they are not available hi time series.) Finally, we repeat the regressions for several country clusterings, based on cultural variables, to examine whether in different cultural clusters the economic and dissatisfaction variables influence entrepreneurship in different ways.

The paper is structured as follows. In the next section we derive hypotheses about the influence of several economic and cultural phenomena on national differences in entrepreneurship, based on the literature. Subsequently, in Section 3 we describe the data of the two databases used in this study. Furthermore, we consider correlations between cultural and dissatisfaction variables, and entrepreneurial activity. In Section 4 we carry out the regressions. The results of the correlation analysis and the regressions are discussed hi Section 5. Finally, hi Section 6, we draw conclusions.

LITERATURE REVIEW AND HYPOTHESES

Definition of Entrepreneurship

In colloquial speech the terms entrepreneurs, self-employed, and businessmen are often used as synonyms. In the management and economic literature, however, entrepreneurship is a behavioural characteristic related to perceiving and creating new economic opportunities (see also Wennekers, Thurik and Buis, 1997). Within the population of self-employed, some are economically marginal, others run their business in a managerial manner, and only a subset are intrinsically entrepreneurial. For practical reasons of measurement, we will equate entrepreneurs and self-employed in our empirical research. However, in formulating our hypotheses and in interpreting our results we will occasionally dietinguieh the marginal, managerial, and entrepreneurial dimensions.

Framework of Explanations

The literature provides many explanations of which factors play a role in the number of business start-ups or in the level of entrepreneurship. When explaining business start-ups, it is customary to use factors dealing with the perceived discrepancy between the role someone plays in society and the role one wants to play. Moreover, *pull* as well as *push* factors are discerned (see Stanworth and Curran, 1973). Pull factors are concerned with the expectation to be better off as an entrepreneur. Push factors take into account the conflict between one's current and one's deshred role in society (see Shapero and Sokol, 1982). In this respect, Van Fraag (1990) develops a model sepeu.at»ng the unobserved factors of 'opportunity' and 'willingness'. She applies a positive interpretation of the push effect. A similar approach is taken by Shapero and Sokol (1982), who also stress positive desirability aspects hi the intentional phase preceding a start-up (see also Krueger, 1993).

This positive approach has roots in the work of Schumpeter (1934), where willingness and ability are emphasised as determinants. A more 'negative' approach is proposed by Weber (1930), stressing responsibility. Achievement motivation is the main driving force observed by McClelland

(1976), whereas Btzioni (1987) straggles with the concept of legitimation, i.e., the way society judges entrepreneurial activities.

Early surveys on what makes people decide to start a business are provided by Brockhaus (1982) **and Shapero** and 9okol (1082), stressing psychological **and** sociological issues, respectively. A survey of determinants proposed in studies with an economic flavour is supplied by De Wit (1993) (see also Blanchflower and Oswald, 1996). Other (and more recent) surveys can be found in Capon, Parley and Hoenig (1990), Birley and Westhead (1994), Van Praag (1996), Roquebert, Philips and Westfall (1996), and Lumpkin and Dess (1996).

Prom all these investigations and surveys we conclude that, next to demographic and economic determinants of entrepreneurship, we need to use a push factor indicating some level of 'dissatisfaction', and that we have to test for the stability of our results across different cultural environments.

Demographic and Economic Determinants

Prosperity (level of per capita income). There probably is a U-shaped relationship between the level of entrepreneurship and the stage of economic development. A low level of prosperity usually coincides with a low wage level, implying little pressure to increase efficiency or the average scale of enterprise. Small firms in crafts and retail trade are therefore dominant in such an economy. A major route for ambitious wage-earners to increase their income then, is to set up shop and become an entrepreneur. Economic development subsequently leads to a rise in wages, which stimulates enterprises to work more efficiently. Lucas (1978) shows that firm size is positively related to the development of national income when labour and capital are substitutes. Economies of scale set in, especially in manufacturing, and the number of small firms (including many marginal entrepreneurs) decreases.

In a later stage of economic development, services become more important and a new rise in entrepreneurship will occur. The advent of information technology, the availability of capital and the differentiation of markets (niches) lead to the occurrence of dis-economies of scale. An increased emphasis on subcontracting may strengthen this process (Acs, Audretsch and Evans, 1994; Bais, Van der Hoeven and Verhoeven, 1995). This may partly explain the present resurgence of entrepreneurship hi some of the most highly developed economies. We would hypothesise that relatively many of these self-employed are highly educated and entrepreneurial.

Female labour share. In most Western countries, working women show substantially lower self-employment rates than working men. Under the assumption of constant female self-employment rates over time, a growing participation of women in the labour market automatically implies a decreasing share of entrepreneurs in the labour force (Acs et al., 1994).

Additionally, there might be other factors. Evans and Leighton (1989) point out that people who become entrepreneur have a long employment history. In many Western countries, married women have a shorter employment history than men, due to a break for getting children and raising a family, and so there is a smaller chance that they will choose for entrepreneurship. Besides, entrepreneurs often make long working days, which women cannot easily combine with their family obligations. Finally, the direction of causality may also be reversed, in that a high percentage of (male) entrepreneurship ties down many women in a supportive role of unpaid family worker.

Anyway, we expect female labour share to be negatively related to the entrepreneurship rate.

Earning differentials. Individuals may be hypothesised to compare expected profits and wages when weighing the possibilities of future entrepreneurship or wage-employment. They probably also consider the risks they will run either way, but these are extremely hard to measure. For the time being, we simply assume that a relatively high level of business profitability will *ceteris paribus* stimulate the entrepreneurship rate. High profits are thus seen as a pull factor for entrepreneurship

(Foti and Vivarelli, 1994; Santarelli and Sterlachini, 1994).

' A pragmatic proxy for the earning differential on the country level is the so-called *labour income quota,* which measures the share of labour income (including the compensation of the self-employed tor their labour contribution) in the net national income. The labour income quota la expected to correlate negatively with the entrepreneurship rate.

Unemployment. The relationship between entrepreneurship and unemployment is probably complex. On the individual level, unemployment (or the threat of it) primarily acts as a push factor for self-employment (Evans and Leighton, 1990; Acs et al., 1994; Foti and Vivarelli, 1994). Since the opportunity costs for unemployed persons to become entrepreneur are relatively low, they will make their choice for entrepreneurship sooner.

On the other hand, (high) unemployment may be connected with an economic decline, which makes prospects for entrepreneurship less profitable. In the literature (Hamilton, 1989; Meager, 1992) it is stated that in principle there is a positive relation, but it changes into a negative relation beyond a critical level when people get disillusioned (inverse U-shape relation).   !:

Population density. Every region needs a minimum supply of facilities regarding trade and craft for their population to survive in these areas. Therefore, thinly populated areas with many dispersed small villages will often have many small retail outlets and workshops. Conversely, urban areas will give rise to economies of scale, through which small-sized entrepreneurship in trade and craft comes under pressure (Bais, Van der Hoeven and Verhoeven, 1995).

On the other hand, Reynolds and Storey (1993) state that a high population density in urban areas explains the birth of new firms in the services sector. Especially the presence of networks attracts Other new firms in ail urban area. Consequently, population dcnoity may have th« earrve U-shaped relationship with entrepreneurship as prosperity.

Cultural Factors

Competitiveness and corruption. Few references in the literature deal with entrepreneurship directly; most deal with other phenomena, which may indirectly be related to entrepreneurship. For example, Lynn (1991) compares four psychological theories of economic growth (Weber's work ethic, Schumpeter's competitiveness, McClelland's achievement motivation, and Wiener's status of the lanH-nwnpr) and finds empirical evidence that Schumpeter's theory explains economic growth best (for the contemporary period). This might suggest that competitiveness is also positively related to entrepreneurship.

Mauro (1995) analyses subjective indices of corruption, bureaucracy, and the efficiency of the judicial system (combined in his so-called *bureaucratic efficiency index*), and finds that corruption lowers private investment and thereby reduces economic growth. This might imply that corruption also hampers entrepreneurship.

Hofstede's cultural indices. Many articles and books discussing the relationship between culture and economy refer to the four cultural indices of Hofstede (1980), viz. power distance (PDI), uncertainty avoidance (UAI), masculinity (MAS), and individualism (IDV). However, the existing hypotheses with respect to the influence of the indices on entrepreneurship, or the hypotheses that can be inferred from indirectly related phenomena, are often contradicting.

For example, Shane (1992) investigates the relation between culture and *inventions,* and finds that countries with small power distance (PDI~) and high individualism (IDV$^+$) are more inventive than others. Shane (1993) examines the influence of culture on rates of *innovation* (per capita number of trademarks), and finds that weak uncertainty avoidance (UAI~) has the strongest influence, even stronger than per capita income. PDI~ and IDV$^+$ are related to innovation as well, though to a lesser extent. Since innovation is more directly related to entrepreneurship than inventiveness,

the latter article shows more evidence for the influence of culture on entrepreneurship than Shane (1992). Although the relationships with culture are indirect, the results of the two references suggest that countries with PDI~, UAI~, and IDV"¹" are more entrepreneurial and hence may have more entrepreneurs than others.

McGrath, MacMillan, and Scheinberg (1992) also refer to Hofstede. The authors compare entrepreneurs and non-entrepreneurs across countries and identify certain entrepreneurial values, independent of culture. These values are subsequently associated with PDI^+ (this is contradicting with Shane, 1992, 1993), UAI~, high masculinity (MAS"¹"), and IDV^+. If entrepreneurs indeed hold values corresponding with larger power distance, uncertainty acceptance, masculinity, and individualism, the hypothesis then is that countries with this cultural pattern have more entrepreneurs. However, the arguments that the authors use to associate there findings with the indices of Hofstede are disputable.

Baum et al. (1993) Hypothesise a reverse role of individualism (at the level of countries). The authors argue that not high but *low* individualism may stimulate entrepreneurship: an individualistic society is more adapted to deal with people who want to do it their own way; both entrepreneurs and non-entrepreneurs might be able to satisfy their motivational needs in a common organisational environment. In a less individualistic society, organisations and institutions do not yield these opportunities and, as a result, people with entrepreneurial needs are more inclined to start for themselves as they cannot satisfy their needs within the existing structures.

The only reference we found in which the direct relationship between culture and entrepreneurship at the level of nations is (empirically) examined, is the paper of Àcs et al. (1994). However, the authors mainly focus on economic explanations and consider culture just marginally. Only the residual influence, which cannot be explained by other variables, is left to examine the effect of culture. Yet, the authors find that UAI^+ and IDV~ are related to self-employment.

Altogether, there are several contradicting hypotheses with respect to the influence of culture on entrepreneurship. One hypothesis is that PDI~, UAI~, MAS"¹", and IDV^+ stimulate entrepreneurship (combining Shane, 1992; Shane, 1993; and McGrath et al., 1992). This is based on the assumption that countries with this cultural profile have relatively more individuals with entrepreneurial values. However, the opposite could also be true. Applying the reasoning of Baum et al. (1993) to all four indices, one could argue that 'entrepreneurial' individuals in countries with PDI^+, UAI"¹", MAS", and IDV~ have more difficulties in 'doing thinga their own way', aincc organisations and existing structures are less suited for them. Dissatisfied as they are in their situation, they may choose for entrepreneurship to be as independent as possible. (The findings of Acs et al., 1994, empirically confirm this reverse role, at least for the indices UAI^+ and IDV~.)

Dissatisfaction. The latter hypothesis coincides with the aforementioned reasoning why a push factor indicating some level of dissatisfaction is needed to explain the level of entrepreneurship. Direct evidence of dissatisfaction as a motive on the micro level has time and again been found in survey studies concerning real-life entrepreneurs. See, for instance, Huisman and de Ridder (1984), who report that frustrations with previous wage-employment, unemployment, and personal crises arc among the mvjst-uitcd motives of a large sample of cntrcprencvtra in eleven different countrics. More recently, Van Uxem and Bais (1996) found that about 50% of almost 2000 new Dutch entrepreneurs mentioned dissatisfaction with their previous job among their motives to start for themselves, although some pull factors were mentioned even more frequently.

What exists on a micro level may also exist on a macro level: do countries where people are in general less satisfied with life and with society have more entrepreneurs than other countries? In this paper we will examine this by translating the individual push factor dissatisfaction into a cultural counterpart.

If dissatisfaction is indeed a determinant in entrepreneurship across countries, then it may also

also be true that the four indices of Hofstede are related according to a dissatisfaction motive: in countries with PDI$^+$, UAI$^+$, MAS", and IDV~ there may be more entrepreneurs, since 'entrepreneurial' individuals are more inclined to start for themselves as they cannot satisfy their needs within the existing structures. We will investigate this in this paper.

Indirect influences of culture. The above hypotheses refer to the *direct* influence of culture on entrepreneurship. However, culture may also have an *indirect* role. For example, one might hypothesise that in cultures characterised by UAI~ the average unemployed will be less fearful of becoming an entrepreneur, making an (assumed) positive relationship with entrepreneurship stronger than in UAI$^+$ countries. However, hypotheses like this are rather speculative. Therefore, we have adopted an explorative approach concerning this relationship.

DATA AND DATA ANALYSIS

The data used in this study come from two databases: a database with variables of entrepreneurship and several economic variables, collected by *EIM Small Business Research and Consultancy,* and a database with mainly cultural variables, collected by the *Institute for Research on Intercultural Cooperation (IRIC).*

EIM's Entrepreneurial and Economic Data

There are several measures of entrepreneurship for a country at a certain time. For example: the *total* number of self-employed, the number of self-employed *per labour force,* and the number of self-employed *per population* between 15 and 65 years. In this paper wfi will consider the second measure, that is, the number of self-employed *per labour force*[1]. EIM has these data available for 23 countries and for the period 1974-1994. The 23 countries are 18 European countries plus USA, Japan, Canada, Australia, and New Zealand (see Table 1 for a list, with the corresponding abbreviations that we will use in this paper). The period 1974-1994 is covered by eleven moments in time, viz. the *even* years (1974, 1976, . . . , 1994).

TABLE 1:
The 23 Countries Studied in this Paper, with their Abbreviations

Country	Abbrev,	Country	Abbrev.	Country	Abbrev.	Country	Abbrev.
Australia	AUL		FRA	Italy	ITA	Portugal	~
Austria	AUT		GER	Japan	JPN	Spain	
Belgium	BEL		GBR	Luxemburg	LUX	Sweden	
Canada	CAN		GRE	Netherlands	NET	Switzerland	
Denmark	DEN		ICE	New Zealand	NZL	USA	
Finland	FIN		IRE	Norway	NOR		

EIM furthermore provides five economic variables corresponding with the (economic) issues discussed in Section 2, viz.:

1. Labour income quota;

2. Population density per square kilometre;

"•Notice that in this paper we consider the *stock* of entrepreneurs, and not the *flow* (such as the birth and death rate of firms). We also investigated the influence of culture on the flow of entrepreneurship, but we did not arrive at clear results.

3. Female labour force as a percentage of the total labour force;

4. Per capita income (GDP):

5. **Unemployment** as a percentage of the total labour force.

These variables are available for the 23 countries listed in Table 1, and for the even years of the period 1974-1994.

The entrepreneurial and economic data were collected by combining several sources. The main sources are: OECD, Main Economic Indicators; OECD, Labour force statistics 1974-1994; and OECD, National Accounts 1960-1994, Detailed Tables. However, many data such as entrepreneurship, unemployment, and labour force were incomplete. EIM completed these data by using ratios derived from data of the Eurostat Labour Force Survey.

Furthermore, EIM made a unified dataset of cuiiepreueuis, which was necessary as In the OECD statistics the definitions of entrepreneurs were not fully compatible between countries. In some countries, entrepreneurs are defined as individuals owning a business that is not legally incorporated. In other countries, owner/managers of an incorporated business who gain profits as well as a salary, are also considered entrepreneur. Canada, Denmark, France, Ireland, the Netherlands, New Zealand, Norway, Portugal, Spain, and USA use the narrow definition, while the other countries apply the broader characterisation. Besides this difference, in some countries unpaid family workers are included in data of entrepreneurship as well. This is the case in Austria, France and the Netherlands. For the countries not following the broader definition, EIM made an estimation of the number of owner/managers by uoing information dciived fixiui statistical bureaus In these countries. The Same holds for the procedure to eliminate unpaid family workers.

IRIC's Cultural Data

IRIC's database DECOR (Database for European Culture cOmparison Research) contains many cultural and some economic and demographic variables. The most important sources of cultural variables are Hofstede (1980) and the European Values Studies project (Stoetzel, 1983; Harding and Phillips, 1986; Halman, 1990; and Ester, Halman, and De Moor, 1993). For this study some irrelevant variables were eliminated, leaving a total number of almost 300 variables. These variables cover many social issues, such as satisfaction with the current situation (life, society, financially, etc.), important values, opinion of social phenomena, confidence in institutions, perception of the economic situation, interest in politics, and many more.

A problem with many variables is that they are collected in only few (mostly European) countries. Each variable covers minimally 9 and maximally 21 of the 23 countries studied in this paper. For example, Iceland is not covered at all by cultural variables, and Luxemburg very scarcely. Besides, most variables correspond with cultural phenomena measured at only one moment in time, so that time-series analysis of these phenomena is not possible.

Yet, the database is unique for the multitude of issues covered. We will use it to carry out a first simple analysis by considering the correlation between each of these issues and entrepreneurship. This yields an idea of what role cultural and social variables play in differences in the level of entrepreneurship across countries.

Furthermore, IRIC provides two variables (in time series) corresponding with the dissatisfaction issue discussed in Section 2, viz.:

- **Dissatisfaction with life** (the percentage 'not at all satisfied with life'):

- **Dissatisfaction with democracy** (the percentage 'not at all satisfied with the way democracy works').

These variables are collected from the Eurobarometer Trends (1994), and are available for twelve European countries. However, for one country (Greece) data are available since 1980, and for two countries (Portugal and Spain) only since 1984.

For some years data were missing. For example, dissatisfaction is not given for 1974. Instead, we took the average of 1973 and 1975. Furthermore, in many years dissatisfaction was measured twice, in which case we took the average of the two measurements. Data for 1994 were missing as well, and instead we took the last measurement of 1993. A similar action was done for the year 1980 for Greece, and the year 1984 for Spain and Portugal: as these were missing, we took the first measurement of the next year. Thus, we collected time series for the even years between 1974 and 1994.

Analysis of the Entrepreneurial Data

To get some idea of the differences between countries with respect to their entrepreneurial activity, we calculated for each country the average level of entrepreneurship in the period 1974-1994. Table 2 lists the countries in descending order of their number of self-employed per labour force.

TABLE 2:

Average Level (and Dispersion) of Entrepreneurship Between 1974-1994, per Country

Country	Aver, (disp.)	Country	Aver, (disp.)	Country	Aver, (disp.)
Greece	18.6 (2.8)	Ireland	10.2 (3.4)	Iceland	8.4 (5.7)
Italy	16.1 (4.0)	USA	9.9 (1.5)	Luxembourg	7.8 (4.3)
Spain	15.5 (2.9)	Switzerland	9.8 (0.9)	Denmark	7.6 (2.8)
Australia	13.8 (3.5)	France	9.5 (2.6)	Germany (W)	6.8 (1.5)
New Zealand	13.3 (6.7)	Norway	8.8 (1.6)	Sweden	6.7 (1.7)
Portugal	11.9 (9.5)	Netherlands	8.7 (2.0)	Austria	5.9 (1.3)
Japan	11.2 (2.8)	Canada	8.6 (3.7)	Finland	5.7 (3.7)
Belgium	10.5 (1.7)	United Kingdom	8.6 (5.3)		

XJiven lor eacn country is the percentage of self-employed per labour fa roc
(dispersion in percentage points between brackets)

As can be seen from this list, the Southern European countries score high on entrepreneurship. The Anglo-Saxon countries are relatively wide apart, with Australia and New Zealand scoring comparatively high, Canada and the United Kingdom relatively low, and Ireland and the USA in between. Japan, Belgium and France score medium. The Scandinavian and Germanic countries, plus the Netherlands, Iceland, and Luxembourg, score medium to low.

The dispersion shown in TaW*> 9. inHicAtes for each country the absolute difference between the minimum and the maximum level of entrepreneurship in the period 1974-1994. For many countries the number of entrepreneurs (per labour force) has increased. For example, Portugal's entrepreneurship increased monotonously from 7.9 % in 1974 to 17.4 % in 1994, i.e., 9.5 percentage points. This implies an increment from the 16th place (out of 23) to the third (!). However, there are also countries for which the number of entrepreneurs has decreased. For example, Luxemburg's number of self-employed per labour force decreased monotonously from 9.8 % (10th place) to 5.6 % (23rd place). Several countries have U-shaped functions (e.g., AUT, NET, and NZL).

To get an inkling of how much a country's level of entrepreneur-ship is fluctuating **compared** to other countries, we calculated the correlations between entrepreneurship in the various years. These «.pp. given in T»hl*> 3.

TABLE 3:

Correlations Between Self-Employed per Labour Force in the Period 1974-1994

	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994
1974	1										
1976	.99	1									
1978	.98	,99	1								
1980	.95	,97	,99								
1982	.95	.97	,98	.99	i						
1984	.90	.92	.93	,95	.98	1					
1986	.88	.90	,91	.92	.96	.99					
1988	.82	.83	.84	,86	,90	.96	98				
1990	.76	.78	.80	,83	.88	.94	.96	.99	1		
1992	.73	.75	.77	.80	,85	.92	.95	.97	.99		
1994	.67	.69	.72	.75	.80	.88	.91	.95	.97	.99	1

All correlations are significant at the 0.001 leve

Tne results Indicate that the correlations between entrepreneurial activity ui the varioue years are highly significant, but slightly decreasing for years wider apart. This implies that a country's entrepreneurial activity compared to other countries *is* changing, however slowly.

Correlations between Culture and Entrepreneurship

We first considered a simple measure of the relationship between culture and entrepreneurial activity: the correlation **between** cultural variables and the percentage of self-employed per labour force. In Section 2 we mentioned some cultural determinants which might play a role in entrepreneurship. These were (amonc others) Schumpeter's competitiveness (see Lynn 1991), the bureaucratic efficiency index of Mauro (1995), and the indices of Hofstede (1980). We have furthermore included the indices of Hoppe (1990), which are comparable with Hofstede's indices (though they were collected at another time, for a smaller set of countries, and for another group of respondents). Although the variables are measured at one point in time only, we correlated them with the number of self-employed *for each year* (the even years between 1974-1994). Table 4 tabulates the results.

One of the first observations is that the correlations with entrepreneurship vary in time. While in some years correlations ase significant, this is not the case in other years. However, as can be expected from the high intercorrelations in Table 3, the differences for years not wide apart are small. Furthermore, assuming that the variables in Table 4 influence entrepreneurship, specifically the correlations in the period *including and after* the years of the variables' measurement are important.

As hypothesised, competitiveness is positively (and significantly) correlated with entrepreneurship (in the period of measurement and later). Corruption is also significantly correlated, but *positively,* contrary to the hypothesis in Section 2 (corruption is reversely represented by the bureaucratic efficiency index, and since the correlation between entrepreneurehip and bureaucratic efficiency is negative, the correlation with corruption is positive). This implies that the more corruption in a country, the more entrepreneurs there are! (This may be a further confirmation of the dissatisfaction hypothesis, see later.)

Correlations Between Entrepreneurship and Lynn's, Mauro's, **Hofstede's,** and Hoppe's Indices

| Variable | 1974 | Entrepreneurship (the number of self-employed per labour force) in the year | | | | | | | | | 1994 |
		1976	1978	1980	1982	1984	1986	1988	1990	1992	
Competitiveness (Lynn)	.34	.38	.44	.43	.43	.46	.50*	.55*	.54*	.54*	
Bureaucratic efficiency (Mauro)	-.48'	-.47*	-.49*	-.55"	-.54*	-.58"	-.56"	-.59"	-.63**	-.66*"	
Power distance index (Hofstede)	.47'	.47*	.49*	.55"	.54*	.55*	.52*	.52*	.49*	.49*	
Uncertainty avoidance index	.52*	.52*	.54*	.57"	.56"	.56**	.55"	.54*	.51*	.52*	
Individualism index	-.09	-.11	-.13	-.16	-.15	-.13	-.12	-.13	-.15	-.18	
Masculinity index	.23	.24	.26	.24	.26	.28	.30	.32	.29	.23	
Power distance index (Hoppe)	.67"	.68"	.70**	.71"	.71**	J1"	.73*"	.73'*	.72"	.70**	
Uncertainty avoidance index	.30	.31	.32	.30	.33	.35	.39	.42	.38	.35	
Individualism index	-.44	-.49	-.51*	-.53*	-.50*	-.48	-.49	-.47	-.49	-.52*	
Masculinity index	.07	.09	.13	.16	.21	.24	.24	.26	.28	.26	

Significance levels:* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Year of variable's measurement is underlined. (Lynn's competitiveness was measured between 1986 and 1989,
Mauro's bureaucratic efficiency index between 1980 and 1983, and Hofstede's indices between 1967 and 1973.)

With respect to the indices of Hofstede, we first notice that they were measured before 1974. Yet, as far as the correlations with entrepreneurship are significant, this significance holds for the whole period 1974-1994. The Hofstede indices were based on aspects of culture that turned out to be stable over a period ol time, and hence it is reasonable to assume that the indices (<ji at least the countries' *rank* on these indices) still hold for some time after 1974. The stability of the indices is confirmed by the magnitude of the correlations in the several years, which is almost constant. Hence, it is also reasonable to assume that even though the indices were measured before 1974, they correspond to cultural values that are still relevant.

Hofstede's indices power distance and uncertainty avoidance are (significantly) correlated with entrepreneurship, according to the dissatisfaction hypothesis. That is, countries with large power distance and strong uncertainty avoidance have more entrepreneurs. The same holds for individualism, which is indeed negatively correlated (however, not significantly). The correlations with masculinity are positive (contrary to the dissatisfaction hypothesis), but they ore not oignifioant.

The correlations between entrepreneurship and Hoppe's indices have the same sign as the correlations with Hofstede's indices, but the significance differs. Power distance is now the only significant variable (in the year of measurement and later). However, the results are not exactly comparable, since the Hoppe indices are available for fewer countries (17, whereas the Hofstede indices are given for 21 of the 23 countries).

Dissatisfaction and Culture

From tlie IRIC database, we considered the variables with a *prima facie* relationship to (dis)satisfaction, and we correlated them with entrepreneurship. We furthermore included the five economic variables, for the year 1984 (the median of 1974 and 1994). Table 5 lists the most significant correlations ($p < 0.01$).

For all variables in the table, the correlations with entrepreneurship are significant for the years of measurement and later. The only significant economic variables are GDP per capita and female labour share. The other three variables (labour income quota, population density, and unemployment) were not significant. This does not only hold for the year 1984, but for the other years as

TABLE 5:
Most Significant Correlations Between Entrepreneurship and Dissatisfaction and Several Economic Variables

Variable	Entrepreneurship (the number of self-employed per labour force) in the year										
	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994
Prosperity (per capita GDP)	-.37	-.38	-.39	-.45*	-.45*	-.50*	-.51*	-.57**	-.63***	-.67*"	-.66*"
Female labour share	-.62"	-.59"	-.56"	-.54**	-.54"	-.55"	-.55"	-.55"	-.53"	-.52*	-.50*
Satisfied with democracy (1977)	-.66	-.67*	-.68*	-.73*	-.81**	-.87**	-.87**	-.87"	-.86**	-.83**	-.80"
Satisfied with democracy (1993)	-.56	-.56	-.57	-.60*	-.68*	-.76"	-.78"	-.79"	-.77"	-.76"	-.77**
Satisfied with society (1977)	-.68'	-.68*	-.J8*	-.72*	-.78*	-.80"	-.80"	-.76*	-.73*	-.71*	-.69*
Confidence in legal system	-.65*	-.65*	-.69*	-.72"	-.74**	-.76"	-.77**	-.78**	-.J5"	-.76"	-.76**
Interest in politics	-.54	-.55	-.55	-.57	-.59*	-.63*	-.65*	-.69*	=.11"	-.75"	-.75"
Dislike people with different ideas	.03*	.CD*	.67"	.71"	.73"	.78*"	7Q"	_82*"	.SJ"	.85***	.85'"
Overall life satisfaction (1985)	-.64*	-.65*	-.66*	-.68*	-.73*	-.75**	-.77**	-.78**	-.74**	-.75"	-.73"
Overall life satisfaction (1993)	-.71*	-.72*	-.73*	-.73**	-.77"	-.79"	-.81"	-.82**	-.78**	-.78"	=J1"
Satisfied with life (1990, male)	-.58*	-.60*	-.63*	-.71"	-.74"	-.81*"	-.82*"	-.83"*	-.81'*'	-.82***	-.79"
Satisfied with life (1990, female)	-.61*	-.63*	-.66"	-.74"	-.77"*	-.85***	-.86***	-.86***	-.85"*	-.86***	-.83"
Dispersion of happiness	.74***	.74***	.74***	.73"*	.75***	.71*"	.71***	.70***	.69***	JO'"	.67"

Significance levels:* *p* < 0.05, **"** p < 0.01, **"*** p < 0.001.
Year of measuring variable is underlined (two underlined years: measurement was in the odd year in between).

well.

Summarising the correlations in Table 4 and Table 5, and adding other significant correlations (p < 0.05, which are not listed) yields the following connotations.

Connotations. Across countries, the following cultural and non-cultural phenomena are related to entrepreneurship.

Less wealth There is more entrepreneurship in the countries that are relatively poor.

Kind of society In countries with more entrepreneurship, the power distance is larger, there is stronger uncertainty avoidance, more bureaucracy and more corruption. There is also a lower **female labour participation.**

Dissatisfaction with society In countries with more entrepreneurship, people are less satisfied with the kind of society they live in. They like less the way democracy is functioning and they have less confidence in the legal system. They think that the society must be changed radically. They are less interested in politics, probably because they feel they cannot cannot reach power holders.

Dislike of 'deviant' behaviour People accept less other people who are different. There is a rejection of homosexuality, prostitution, euthanasia, unmarried mothers, and of other 'deviant' ideas, values and beliefs.

Lower life satisfaction In countries with more entrepreneurship, the overall life satisfaction is lower. Besides, there are larger differences in happiness between the happy and less happy people than in other countries.

REGRESSIONS ON ENTREPRENEURSHIP

In this section we will test the hypotheses of Section 2 with respect to the economic and the dissatisfaction issues discussed there. In Section 3 we described five economic and two dissatisfaction

variables, given in time series. These variables will be used in the regressions on entrepreneurship.

Rather had we also included the indices of Hofstede, but these are, unfortunately, not given in time series. However, there is another way of studying their influence. We will carry out regressions for distinct cultural country clusterings, based on t.hft Hofstede indices. This enables US to examine whether in different clusters the five economic and the two dissatisfaction variables influence entrepreneurship in different ways. Thus we can indirectly study the role of culture.

Clustering of Countries

Each Hofstede index is used to divide the countries into two clusters (for example: *high* PDI and *low* PDI). Thus we can investigate if, for example, in high-PDI countries the explaining variables influence entrepreneurship in another way than in low-PDI countries.

The advantage of using the Hofstede indices to determine country clusters, is that the indices are available tor most or the countries studied in this paper. Unfortunately, for Iceland and Luxemburg, the four indices are not available, but for the latter country estimates are known, which will be used.[2] Accordingly, for the regressions in country clusters only Iceland is excluded.

We will also use the combination of the four indices to make again two clusters. Altogether, with the four indices and the combination, we have ten different country clusters.

Given a Hofstede index, the two corresponding clusters are determined using the *K-means algorithm*. In this algorithm the countries are assigned in turn to the nearest of the two cluster centers (which are initialised as the lowest and the highest score among the 22 countries). When all cases have been added, each cluster center is updated as the average score of the countries it contains. This process iterates until the solution converges.

Regressions Across All Countries (No Clustering)

The *dependent* variable in the regressions is entrepreneurship (the number of self-employed per labour force), the *independent* (explaining) variables are the five economic and the two dissatisfaction variables described previously. The time series of all variables are 'pooled' over time, so that we obtain variables with maximally 23 x 11= 253 cases (23 countries, 11 years).

We will first consider a regression without clustering of countries and without the two dissatisfaction variables. The reason for leaving out the dissatisfaction variables is that they are available for only twelve of the 23 countries studied hi this paper, whereas the other five independent variables are given for all countries. Table 6 summarises the results of the regression.

TABLE 6:

Regression on Entrepreneurship Across 23 Countries

Cluster	Countries	N	Diss. incl.	R^2	Lab. inc. quota	Populat. density	Fem. lab. share	GDP per capita	Unempl
All	*23:* (see Table 1)	253	no	.24	-0.025 (-0.424)	-0.069 (-1.210)	-0.265 (-4.148)	-0.228 (-3.487)	0.226 (3.919)

Tabulated are the standardised regression coefficients (T-values between brackets);
coefficients with $|T| > 2$ are written in bold

The first column of Table 6 shows the clustering of countries we are using. In this case we consider all 23 countries (indicated in column 2). The N in column 3 denotes the number of cases in

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[2] These estimates were provided by the *Institute for Training in Intercultuml Management* (ITIM) and are based on extensive data from training sessions.

the regression. Its maximum is 253 and since there are no missing data here, all cases remain. The fourth column indicates that the dissatisfaction variables are excluded from the regression. The fifth column denotes the amount of explained variance (R^2, also called the *coefficient of determination)*. The last five columns correspond with the five economic variables.

The second row of Table 6 gives the *standardised regression coefficients* of the five economic variables in the regression equation, when they are all entered (these coefficients are usually denoted by β). In the third row, the corresponding *T*-values (between brackets) indicate the significance of the variables entered.

The significant coefficients in Table 6 (the coefficients with a corresponding absolute T-value of 2 or higher) are written in bold. Three of the five economic variables turn out to be significant: negative are *female labour share* and *GDP per capita*; positive is *unemployment.*

Subsequently, we consider the regression for the twelve countries for which we have the dissatis-faction variables. We will first include only the five economic variables, and subsequently add the dissatisfaction variables. The reason for this is that we can thus distinguish the additional explaining power. Table 7 summarises the results.

TABLE 7:

Regressions on Entrepreneurship Across Twelve Countries, Including Dissatisfaction

Countries			Diss. incl.	R^2	Diesat. life	Diseat. democr.	Lab.inc. quota	Populat. density	Fern. lab. share	GDP per capita	U&empl.
12: BEL, LFILW, r KA GBR, GER, GRE [RE, ITA, LUX NET, FOR, SPA		119	no	.32			-0.035 (—0.300)	-0.157 (−1.779)	-0.028 (-0.310)	-0.438 (<—1.724)	0.126 < 1.100)
			yes	.64	0.463 (5.228)	0.266 (3.384)	-0.055 (-0.832)	-0.034 (-0.498)	-0.029 (-0.455)	-0.139 (-1.740)	0.121 (1.776)

Tabulated are the standardised regression coefficients (*T*-values between brackets); coefficients with $|T| > 2$ are written in bold

In the regressions of Table 7 we apply again no clustering (column 1), i.e., we consider all countries (for which we have dissatisfaction variables). These countries are listed in column 2 (see Table 1 for the abbreviations used). Column 3 shows that there are $N = 119$ cases in the regression, which — because of some missing data (for Greece, Portugal and Spain the time series start later than 1071) — ie fewer than the maximum of 12 x 11 — 132 (12 countries, 11 years). The fourth column indicates whether the dissatisfaction variables are included in the regression or not. The last seven columns correspond with the seven independent variables (now including the dissatisfaction variables).

In case the dissatisfaction variables are not included and only the five economic variables are considered (second row of Table 7), we see a slightly different picture than for the regression across all 23 countries (Table 6): only *GDP per capita* is significant (negatively again). The variables *female labour share* and *unemployment* are apparently not significant for this smaller set of countries.

If the dissatisfaction variables are included in the regression as well, the explained variance (.R^2; fifth column) increases significantly from 39. to fvt Roth dissatisfaction variahles are positively influencing entrepreneurship (the relation is strongly significant). They are the only significant variables.

To conclude this section: across the twelve European countries GDP per capita influences entre-preneurship (negatively). However, dissatisfaction with life and with democracy are even stronger determinants.

Regressions in Country Clusters, without Dissatisfaction Variables

.We will now consider **regressions** for the various country **clusterings based** on the indices of **Hofstede.** Since the dissatisfaction variables are available for only twelve of the 23 countries studied in this **paper, we first exclude tkcoc variables from the regressions. In the next subsection we will discuss** the regressions *including* the dissatisfaction variables.

Table 8 summarises the results. For example, the clustering based on the four indices PDI, UAI, MAS, and IDV (called 'All_4', see first column) divides the 22 countries (excluding Iceland) into two groups: 'All_4=r and 'All_4=2'. The first group consists of the Anglo-Saxon and Scandinavian countries, and the Netherlands (see 2nd column). For these eleven countries there are no missing data, so that the number of cases (3rd column) is maximal: 11 x 11 = 121 (11 countries, 11 years). For this country cluster all variables come out significantly in the regression with entrepreneurship: labour income quota, population density, and female labour share negatively; GDP per capita and **unemployment positively.**

TABLE 8:
Regressions on **Entrepreneurship** in Country Clusters, Excluding Dissatisfaction

Cluster	Country	N	Diet. incl.	R*	Lab. inc. quota	Populat. density	Fem. lab. share	GDP per capita	Unempl.
All_4=1	11: Anglosax, Scan. NET	m	no	.36	-O.2S8 (-3.452]	-O.334 (-4.206)	**-0.527** (−4.923)	0.2SG (2.429]	0.180O (2.354)
All_4=2	11; Germanic, South, BEL, LUX, FRA, JPN	121	no	.48	o.iai (2.572)	0.013 (0.178)	-0.22O (-2.932)	-O.3BB (-5.217)	a.333 (4.604)
rtfi-	14: Anglosax, Germanic, Scan, NET	154	av	.94	**0.210** (-2.9B2]	**0.400** (-5,869)	**-0.520** (-6.184)	**0.822** (3.695)	**0.240** (3.519)
PDI+	S: South, BEL, LUX, FRA. JPN	88	no	.45	0.177 (1.943)	-0.040 (-0.432]	--0.133 (-1.460)	**-0.467** (-5.143)	D.3OS (3.468)
UAI-	13: Anglosax, Scan, GER, SWI. NET	143	no	.38	-O.28B (-3.664)	-C.421 (-5.801)	-O.54I (-6.539)	0.300 (3.351)	O.1B8 (3.B49)
UAI+	9: South. AUT, BEL, LUX, FRA, JPN	99	no	.50	**0.199** (2.437)	0.104 (1.309)	**-0.212** (-2.617)	-O.«9 (- 5 .655)	**0.366** (4.V1B)
MAS-	S: Scan, NET. FRA, POR, SPA	88	no	**.68**	**-0.386** (−5.927)	-O.31B (-4.059)	-O.8BJ (-6.209)	**-0.167** (-2.189)	O.3BT (4.513)
MAS+	14: Anglosax, Germanic, BEL, LUX, ORE, ITA, JPN	15*	no	.24	O.1S3 (2.346)	-O.I 61 (-2.188)	0.098 (1.068)	**-0.369** (-3.740)	0.087 (1.105)
IDV -	t: AUT, CIRE, POR, JPN	44	no	.57	**0.308** *11*.052)	0.247 (1.638)	-0.074 (-0.350)	**-0.634** (-3.889)	
IDV +	IS: Anglo-ins, Scan, GER, SWI, NET, BEL, LUX, FRA, !TA, SPA	198	no	.39	-O.384 (-4.835)	-O.3O3 (−3.425)	-D.4B7 (-6.745)	0.060 (0.833)	

Tabulated !.re the standardised regression cOefficients (T-vallies between brackets); coefficients with \T\ > 2 are written in bol
Anglosax = {AUL, CAN. GBR, IRE, NZL, USA}
G.rmanic = {AUT, GER, SWI}
Scan = (DEN, FIN, NOR, SWE}
Sooth = {GRE, ITA, POR, SPA)

In the other cluster based on the four indices **('All_4=2'),** labour income quota is again signifi-cant, but positive now! Female labour share and GDP per capita are both negative, and unemploy-ment SB positive. Population density ie *not* **significant** for **this cluster.**

Considering Table 8, we make the following observations:

- **Female** *labour share* always has the (expected) *negative* influence (except in **MAS+,** but there it is not significant); apparently, this is independent of culture. However, the influence in the cluster 'All_4==l' is stronger than in the cluster 'AU_4=2'; in *A11_4=1' it is the most significant variable. The same holds for the clusters PDI~ and UAI~, compared to PDI+ and **UAI+.** Notice that the clustering according to the indices PDI or UAI corresponds very much

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with the clustering according to 'All_4' Also for MAS (!) and IDV$^+$, female labour share is the most significant variable.

- *(1F)P per r.njtit.n.* is thp most significant variable *(negatively)* for the clusters 'All_4=2', PDI$^+$, UAI$^+$, MAS$^+$, and EDV~. It has a *positive* influence for most of the other clusters (mainly 'All_4=r, PDI~, and UAI~). We will discuss these interesting results in Section 5.

  Population density always appears with *negative* sign when it is significant in the regression equation. It is only significant in 'All_4=l', PDI$^-$, UAI$^-$, MAS$^-$ and MAS+, and IDV+, and not in the other clusters. In 'All_4=l', PDI~, and UAI$^-$ it is the second-most significant variable (after female labour share).

- *Unemployment* always has a *positive* influence, irrespective of culture. However, the influence is stronger in 'All_4=2', PDI$^+$, UAI+, MAS$^-$, and IDV+. In 'AU_1—2', PDI+, and UAI+ it is the second-most influential variable (after GDP per capita).

  The variable *labour income quota* has a *negative* influence in the clusters 'All_4=l', PDI~, UAI~, MAS", and IDV$^+$. For the other clusters the influence is *positive* (though less significant). Thus is puzzling, and we will further discuss it in Section 5.

To draw a conclusion from these results, we first notice that the most meaningful clustering (both with respect to the results of the regressions and considering the, cultural similarity of the countries) is the clustering according to PDI or UAI, which is almost equivalent to the clustering according to 'AU_4'. The differences between these clusterings correspond to the exact position of the Germanic countries, but the results of the regressions are almost the same.

A general conclusion is that for the countries with PDI~ and/or UAI~ female labour share (—) is the most significant determinant of entrepreneurship, followed by population density (—). These are the Anglo-Saxon and Scandinavian countries including the Netherlands, but it also holds for the Germanic countries. For these countries, GDP per capita (+ !!), labour income quota (—), and unemployment (+) are important as well.

For the other countries, the Southern European countries including Belgium, Luxemburg, France, and Japan, and also for the Germanic countries, GDP per capita (—) is the most significant determinant of entrepreneurship, followed by unemployment (+).

Regressions in Country Clusters, Including Dissatisfaction Variables

Now we will consider the twelve countries for which the dissatisfaction variables are given. For each clustering we have first carried out a regression without the dissatisfaction variables, to see whether for the twelve countries the influence of the five economic variables is different than for the 22 countries studied in the previous subsection. Subsequently, we added the two dissatisfaction variables to discern their extra explaining power. Table 9 summarises the results. (The clusterings according to PDI and UAI turned out to be equivalent. The clustering according to IDV is omitted, since IDV~ contained only two countries.)

Considering the five economic variables only (excluding the dissatisfaction variables), a first observation is that for this smaller set of countries fewer variables are significant. For example: in 'All_4=r and PDI~/UAI~ there is only one significant variable (not the same one), whereas for the 22 countries all variables were significant in these clusters. Other observations are (in the order of the previous subsection):

- *Female labour share* is only significant in 'All_4=l' and MAS$^-$ *(negatively)*.

Regressions on Entrepreneurship in Country Clusters, Including Dissatisfaction

Cluster	Countries	N	Diss. incl.	R^2	Dissat. life	Dissat. democr.	Lab inc quota	Populat density	Fam lab share	GDP per capita	Unem
All_4=1	4: DEN, GRR IRE, NET	44	no	.30			0.0S7 (-0.356)	-0.388 (-1.414)	-0.T46 (-2.254)	0.575 (1.161)	0.235 (1.172)
			yea	.47	0.073 (0.380)	G.B26 (2.742)	-0.061 (-0-276)	-0.6B1 (-2.168)	-1.049 (-3.424)	1.266 (3.133)	0.195 (1.04!)
All_4=2	8: BEL, FRA GER, GRE ITA, LUX POR, SPA	75	ao	.PI			0.095 (1.0S5)	-0.ies (-2.456)	-0.109 (-1.333)	-0.B21 (-6.215)	0.3OT (3.730)
			yta	.76	-0.035 (-0.265)	0.439 (4.84S)	0.040 (O.S60)	-0.231 (-2.938)	-0.040 (-0.571)	-0.4T4 (-4.979)	0.1BB (2.143)
PDI⁻ or UAI~	5: DEM, GBR GER, IRE NET	55	no	.35			-0.005 (-0.022)	-0.106 (-0.498)	-0.411 (-1.678)	0.190 (0.614)	0.4B1 (2.706)
			yes	.50	-0.048 (-0.32!)	O.662 (3.555)	-0.044 (-0.228)	-0.216 (-1.118)	-0.B74 (-2.577)	0.654 (2.145)	0.382 (2.514)
PDI⁺ or UAI⁺	7: BEL, FRA ORE, ITA LUX, POR SPA	64	no	.58			0.111 (1.165)	-0.118 (-1.330)	-0.082 (-O.S93)	-0.B88 (-6.315)	0.283 (3.037)
			yes	.72	-0.131 (-0.B92)	0.4BB (4.474)	0.069 (0.820)	-0.224 (-2.519)	-0.023 (-0.2B3)	-0.aoi (-5.352)	0.138 (1.617)
MAS"	5: DEN, FRA NET, POR SPA	45	no	.84			-0.4BB (-5.847)	-0.B2T (-4.862)	-0.940 (-3.334)	-0.312 (-3.243)	0.120 (1.497)
			yea	.8.7	-0.399 (-3.252)	0.173 (1,906)	-0.692 (-6.972)	-0.736 (-5.578)	-0.377 (-3.650)	-0.340 (-3.796)	0.041 (0.560)
MAS+	7: BEL, GBR GER, GRE IRE, ITA LUX	74	no	.29			0.196 (1.124)	-0.219 (-1.201)	0.192 (5-122)	-0.28S (-1.684)	0.130 (0.913)
			res	.78	O.643 (E.199)	D-SB7 (4.956)	0.107 (i.001)	-0.168 (< 1.590)	0-171 (1.647)	0.070 (0.622)	0.051 (0.550)

Tabulated are the standardised »fr«*l« coefficients (T-values between brackets); coefficients with $|T| > 3$ in written in bold

- *GDP* per *capita* is (again) the most significant variable *(negatively)* for the clusters 'All_4=2', and PDI⁺/UAI⁺.

- *Population density* is always *negative,* but only significant for 'All_4=2' and MAS".

- *Unemployment* is always *positive,* but only significant in 'All_4=2', PDI⁻/UAI⁻, and PDI⁺/UAI⁺. In PDI-/UAI- it is the only significant variable. In 'All_4=2' and PDI+/UAI+ it " the second-most important variable (after GDP per capita).

- *Labour income quota* is only significant in MAS" *(negatively).*

Adding now the two dissatisfaction variables, we first observe that some economic variables that were not significant, now *are.* For example: in 'All_4=l' three of the five economic variables are now significant, whereas only one of them was significant with the dissatisfaction variables excluded. Furthermore, we observe the "following:

- The explained variance (R^2) increases significantly when the dissatisfaction variables are included in the regression.

- *Dissatisfaction with life* does not seem to be very important *within* country clusters (as it was *across* all countries, see Table 7). For MAS⁺, it still plays the main role. In MAS" it even appears with a *negative* sign (but only after four economic variables).

- *Dissatisfaction with democracy* now plays a very important role *(positively).* Only in MAS" it is not significant. It is the most significant variable in PDI~/UAI~, and the second-most significant variable in PDI⁺/UAI⁺ (after GDP per capita).

To conclude this subsection (again focussing on the indices PDI/UAI): For PDI^-/UAI^-, dissatisfaction with democracy (+) is the most important variable, followed by female labour share (—), unemployment (+) and GDP per capita (+). For PDI^+/UAI^+, GDP per capita (—) is the most important variable, followed by dissatisfaction with democracy (-f-) and population density ( ).

Summary of the Regressions

We will now summarise the results of the regressions on entrepreneurship discussed in this section. Considering first the economic variables, we see that *across all countries* the significant variables are (in order of significance) female labour share $(-)$, unemployment (-f), and GDP per capita (—) (see Table 6). *Within the country clusters* PDI~ and UAI~ (see Table 8), female labour share (—) is still most important, followed by population density (—). The other three economic variables are also **significant,** but the order of significance differs slightly for the two country clusters. In the clusters PDI^+ and UAI^+ the most important variables are GDP per capita (—) and unemployment (+). Female labour share (—) and labour income quota (+) are also significant, but only for UAI^+.

When all seven independent variables are included, we see that *across all countries* dissatisfaction with life (-f) and with democracy (+) are the most (and the only) significant variables (see Table 7). *In the country cluster* PDI^-/UAI^-, dissatisfaction with democracy (-f-) is most important, followed by female labour share (—), unemployment $(+)$, and GDP per capita (+) (see Table 9). For PDI^+/UAI^+ the significant variables are GDP per capita (—), dissatisfaction with democracy (+), and population density (—). Table 10 summarises the results.

TABLE 10:
Significant Variables in the Regressions on Entrepreneurship

Only Economic Variables:

Across all (23) countries:
1: **Female labour share (—)**
2: **Unemployment (+)**
3: **GDP per capita (-)**

In countries with PDI~ or UAI	**In countries with PDF$^{1''}$ or UAI$^+$**
1: Female labour oKare ( )	It OOP per capita (—)
2: **Population density (—)**	2: **Unemployment (+)**
3: **GDP per capita (-f),**	3: **Female labour share (—)**
Unemployment (+),	4: **Labour income quota (+)**
Labour income quota (—)	(3 and 4 only for **UAI$^+$**)

Economic and Dissatisfaction Variables

Across all (12) countries:
1: **Dissatisfaction with life (+)**
2: **Dissatisfaction with democracy (+)**

In countrics -«vitli PPI~ or UAI$^-$:	In oountrioo witK PPI+ or UAI$^+$
1: **Dissatisfaction with democracy (+)**	1: **GDP per capita (—)**
2: **Female labour share (—)**	2: **Dissatisfaction with democracy**
3: **Unemployment (+)**	3: **Population density (—)**
4: **GDP per capita (-f)**	

Considering this summary, we conclude that the influence of PDI and UAI on the role of the economic variables in entrepreneurship is especially clear for GDP per capita and labour income quota. For PDI^-/UAI^- GDP has a positive influence, and for PDI^+/UAI^+ it is negative. Labour

income quota also has a reverse role: across the 23 countries it is negative for PDI /UAI and positive for PDI^+/UAI^+ (but for PDI^+ not significantly). Across the twelve countries, the positive influence of labour income quota in PDI^+/UAI^+ is not significant. For the other variables, the signs do not change. The only difference is that same vn.rin.hlps lose their Ri{rnificanr.e in the other cluster, or change their order.

DISCUSSION

Cultural Variables and Dissatisfaction

The correlations between entrepreneurship and cultural variables listed in Tables 4 and 5 imply some interesting relationships. As was hypothesised in Section 2, entrepreneurship is positively related to Schumpeter's competitiveness (see Lynn 1991). But contrary to what was suggested, entrepreneurship is also positively related to corruption (i.e., negatively to the bureaucratic efficiency index of Mauro 1995). However, this positive relationship might very well have to do with the dissatisfaction issue raised in Section 2.

This hypothesis is supported by the correlations between entrepreneurship and cultural values, and the correlations between entrepreneurship and variables related to (dis)satisfaction with life and with society. The connotations listed in Section 3 leave quite a coherent picture. Countries in which people are less satisfied with life as a whole have more entrepreneurs. These are societies with larger power distance, stronger uncertainty avoidance, more bureaucracy, more corruption, and which are relatively poor. People in these countries are less satisfied with the way their democracy is functioning and With their society in general. Perhaps peuple in scujh cuuntries arc more cosily forced into self-employment, as they cannot optimally develop themselves within existing structures and organisations. In other countries, people possibly have more opportunities to find an appropriate job within existing structures, and, as a result, are less inclined towards starting for themselves.

The dissatisfaction hypothesis is further confirmed by the results of the regressions in Section 4. Dissatisfaction with life and with democracy are even stronger determinants than the economic variables.

Economic and Demographic Variables

The distinction between countries based on cultural clusters turns out to be highly relevant for our analysis. Some economic variables have a negative influence on entrepreneurship in certain clusters, and a positive influence hi other clusters. Besides, several variables which were not (or not always) significant in the regressions across all countries, more often appear significantly in the regressions across the cultural clusters. This would not have been visible if we had neglected the cultural context, and in that case we would have obtained incorrect results.

Overall, we find a positive relationship between *unemployment* and entrepreneurship. Unemployment can thus be seen as a push factor in all countries. Since a negative relation was never found, we conclude that in the countries considered the unemployment rate generally remained below the level where it discourages people to start a business.

With respect to *prosperity, a* negative correlation with entrepreneurship dominates. However, when cultural clusters are distinguished, sometimes (for example in PDI~ or UAI~) a positive relation is found. Since the countries in for instance the PDI~ cluster are relatively affluent and those in PDI^+ are less prosperous, these findings are in conformity with the U-shaped relationship between entrepreneurship and prosperity, as hypothesised in Section 2. In countries that have a relatively low level of GDP per capita, there is a negative relation due to the yet unexploited possibilities for economies of scale. In countries with a high level of GDP per capita, there is a

positive relationship because a stage of tertiairisation, **differentiation** of markets, and dis-economies pf scale has set in.

Since prosperity is negatively correlated with power distance, as well as with uncertainty avoid-anw; (be it weakly), and positively with individualism (see rlolstede, 1991), it is likely that it is the level of prosperity which provides an indirect link between these cultural dimensions and entrepreneurship. The triangular relationship between cultural dimensions, prosperity and entrepreneurship obviously deserves further research.

Concerning *labour income quota*, only in some cases did we find significant evidence for the expected negative relation with entrepreneurship (implying that a higher level of profitability is a stimulus towards entrepreneurship). When (cultural) clusters are distinguished, a positive relationship is sometimes found (for instance in UAI^+ and IDV~), which is not confirmed by theory. This may, however, be due to a reversed causality when a high level of entrepreneurship causes a low level uf profitability. In a country with little social security and a low supply of jobs, this situation may perpetuate itself. At the same time, the compensation of entrepreneurial labour is also counted within the labour income quota, which may cause a statistical artefact.

With respect to *population density,* there appears to be a negative relation with entrepreneurship, which implies that the minimum level of provisions (shops, crafts) needed in thinly populated areas and the effect of economies of scales in densely populated areas overrule the effect of the attractiveness of networks.

Finally, as predicted in Section 2, the *participation of women* in the labour force has a negative impact on entrepreneurship.

CONCLUSIONS

The determinants of entrepreneurial activity constitute a complex whole. But as far as national differences are concerned, one clear determinant appears: dissatisfaction. Across nations, dissatisfaction with society and with life in general seems to be a distinguishing factor: countries with people who are less satisfied with the society they live in and who have a lower overall life satisfaction, have more entrepreneurs.

Two warnings are appropriate here. First, the relationship between dissatisfaction and self-employmont holdo *across* nations, and may not be true for individuals *within* countries. It might be that dissatisfaction also plays a role within countries (as is often stated in the literature), but this *cannot* be concluded from this cross-national study. Secondly, one must be very prudent in extrapolating the conclusions found in this study to world-wide relationships. The results hold for Western countries (including Japan). It remains to be investigated whether the relationship still exists when other (e.g. developing) countries are included.

Finally, it is tempting to extract some 'stylised facts' from our research, regarding entrepreneurship and stages of economic development. In the early stages, when countries are relatively poor, their culture can often be characterised by large power distance and low individualism, and often also by strong uncertainty avoidance (at Icaot in the \Vcotcrn countrics). At the aame time, their population is often relatively dissatisfied with society and life hi general. All these circumstances give rise to a high incidence of (small-scale) entrepreneurship. In the next stage, countries start reaping hitherto unexploited economies of scale, prosperity rises, and dissatisfaction seems to diminish. The result is a definite decline of entrepreneurship. Finally, when countries are fully industrialised and a service economy sets in, several countervailing forces seem to dominate the scene. First of all, information technology and differentiation of markets create dis-economies of scale and invite new, innovative entrepreneurship. Simultaneously, a high level of satisfaction with life in these societies may, however, slow down the drive towards entrepreneurship. But when unemployment increases

for a longer period, due to the transition to the knowledge-based economy, this may again elicit new /(and perhaps marginal) business start-ups.

It is not straightforward, however, how governments in the most highly developed economies may stimulate this resurgence ot entrepreneurship by, tor instance, safeguarding a reasonable profitability of private enterprise.

REFERENCES

Acs, Z.J., D.B. AuDRETSCH, AND D.S. EVANS. 1994. The determinants of variations in self-employment rates across countries and over time. (Mimeo).

BAIS, J., W.H.M. VAN DER HOEVEN, AND W.H.J. VERHOEVEN 1995. *Determinanten van zclfotandig ondcrncmcrechap. D«n Haag: OSA.. (In Dutch.).*

BAUM, J.R., J.D. OLIAN, M. EREZ, E.R. SCHNELL, K.G. SMITH, H.P. SIMS, J.S. SCULLY, AND K.A. SMITH. 1993. Nationality and work role interactions: A cultural contrast of Israeli and U.S. entrepreneurs' versus managers' needs. *Journal of Business Venturing,* 8, 499-512.

BlRLEY, S. AND P. WESTHEAD. 1994. A taxonomy of business start-up reasons and their impact on firm growth and size. *Journal of Business Venturing,* 9, 7-31.

BLANCHFLOWER, D.G. AND A.J. OSWALD. 1996. What makes an entrepreneur? *Journal of Labour Economies.*

BROCKHAUS, R. 1982. The psychology of the entrepreneur. In C. Kent, D. Sexton and K. Vesper (eds.), *Encyclopedia of Entrepreneurship.* Prentice-Hall Inc., Englewood Cliffs, NJ.

CAPON, N., J.U. PARLEY, AND S. HOENIG. 1990. Determinants of financial performance: A meta-analysis. *Management Science,* 36, 1143-1158.

ESTER, P., L. HALMAN, AND R. DE MOOR, eds. 1993. *The Individualizing Society: Value Change in Europe and North America.* Tilburg University Press.

ETZIONI, A. 1987. Entrepreneurship, adaptation and legitimation: A macro-behavioral perspective. *Journal of Economic Behavior and Organization,* 8, 175-189.

EUROBAROMETER TRENDS 1974-1993. 1994. Brussels: European commission.

EVANS, D.S. AND L.S. LEIGHTON. 1989. The determinants of changes in US self-employment, 1968-1987. *Small Business Economics,* 1, 111-119.

EVANS, D.S. AND L.S. LEIGHTON. 1990. Small business formation by unemployed workers. *Small Business Economics,* 2, 319-330.

FOTI, A. AND M. VlVARELLI. 1994. An econometric test of the self-employment model: The case of Italy. *Small Business Economics,* 6, 81-93.

HALMAN, L. 1990. *Waarden in de Westerse Wereld: Een Internationale Exploratie van de Waarden in de Westerse Samenleving.* Tilburg University Press. (In Dutch).

HAMILTON, R.T. 1989. Unemployment and business formation rates: Reconciling time series and cross-sections. *Environment and Planning A,* 11, 249-255.

HARDING, S. AND D. PHILLIPS, with M. Fogarty. 1986. *Contrasting Values in Western Europe.* London: Macmillan.

HOFSTEDE, G. 1980. *Culture's Consequences: International Differen.r.p.s in Wnrt.Related Valu<* Beverly Hills CA: Sage Publications.

HOFSTEDE, G 1991, *Cultures and Organizations: Software of the Mind.* McGraw-Hill, London.

HOPPE, M.H. 1990. *A Comparative Study of Country Elites: International Differences in Work-Related Values and Learning and their Implications for International Management Training and Development.* PhD thesis, University of North Carolina at Chapel Hill.

HUISMAN, D. AND W.J. DE RIDDER. 1984. *Vernieuwend Ondernemen.* SMO, Utrecht. (In Dutch).

KLUNDERT, TH. VAN DE. 199T. *Groei en instituties; Over de oorzaken van economische ontw{kkeling.* Tilburg University Press. (In Dutch).

KRUEGER, N. 1993. The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship: Theory and Practice,* 18, 5-21.

LUCAS, R.E., JR 1978. On the size distribution of business firms. *Bell Journal of Economics,* 9, 508-523.

LUMPKIN, G.T. AND G.G. DESS. 1996. Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review,* 21, 135—172.

LYNN, R. 1991. *The Secret of the Miracle Economy; Different National Attitudes to Competitiveness and Money.* Crowley Esmonde Ltd.

MAURO, P. 1995. Corruption and growth. *Quarterly Journal of Economics,* pages 681-712.

McCLELLAND, D.C, 1976. *The Achieving Society.* Van Nostrand, Princeton.

McGRATH, R.G., I.C. MAcMILLAN, AND S. SCHEINBERG. 1992. Elitists, risk-takers, and rugged individualists? An exploratory analysis of cultural differences between entrepreneurs and non entrepreneurs. *Journal of Business Venturing,* 7, 115-135.

MEAGER, N. 1992. Does unemployment lead to self-employment? *Small Business Economics,* 4, 87-103.

NORTH, D.C. AND R.P. THOMAS. 1973. *The Rise of the Western world; A New Economic History.* Cambridge, UK: University Press.

OLSON, M. 1982. *The Rise and Decline of Nations; Economic Growth, Stagflation and Social Rigidities.* New Haven/London: Yale University Press.

PRAAG, C.M. VAN 1996. *Determinants of Successful Entrepreneurship.* Amsterdam: Thesis Publishers.

REYNOLDS, P.D. AND D.J. STOREY. 1993. *Local and regional characteristics affecting small business formation: A cross national comparison.*

ROQUEBERT, J., R.L. PHILIPS, AND P.R. WESTFALL. 1996. Markets vs management: What 'drives' profitability? *Strategic Management Journal,* 17, 653-664.

SANTARELLI, E. AND A. STERLACCHINI. 1994. New firm formation in Italian industry. *Small Business Economics,* 6, 95-106.

SCHUMPETER, J.A. 1934. *The Theory of Economic Development.* Harvard University Press, Cambridge, MA,

SHAKE, S.A. 1992. Why do some societies invent more than others? *Journal of Business Venturing,* 7, 29-46.

SHANE, S.A. 1993. Cultural influences on national rates of innovation, *Journal of Business Venturing,* 8, 59-73.

SHAPERO, A. AND L. SOKOL. 1982. The social dimensions of entrepreneurship. In C. Kent, D. Sexton and K. Vesper (eds.), *Encyclopedia of Entrepreneurship.* Prentice-Hall Inc., Englewood Cliffs, NJ.

STANWORTH, M.J.K. AND J. CURRAN. 1973. *Management Motivation in the Smaller Business.* London: Cower Press.

STOETZEL, J, 1983. *Les Valeurs du Temps Present.* Paris: Presses Universitaires de France. (In French)

UXEM, F.W. VAN AND J. BAIS. 1996. *Het starten van een bedrijf; Ervaringen van 2000 starters.* Zoetenneer: EIM. (In Dutch)

WEBER, M. 1930. *The Protestant Ethic and the Spirit of Capitalism.* New York: Scribner's,

WENNEKERS, A.R.M., A.R. THURIK, AND F. BUIS. 1997. *Entrepreneurship, economic growth and what links them together.* Zoetenneer: EIM.

WIT, G. DE. 1993. Models of self-employment in a competitive market. *Journal of Economic Surveys, 7,* 367-397.