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## Entrepreneurship & Regional Development

### An International Journal

Publication details, including instructions for authors and subscription information:  
<http://www.informaworld.com/smpp/title~content=t713721987>

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Online Publication Date: 01 July 2007

To cite this Article: Vinogradov, Evgueni and Kolvareid, Lars (2007) 'Cultural background, human capital and self-employment rates among immigrants in Norway', *Entrepreneurship & Regional Development*, 19:4, 359 - 376

To link to this article: DOI: 10.1080/08985620701223213

URL: <http://dx.doi.org/10.1080/08985620701223213>

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# Cultural background, human capital and self-employment rates among immigrants in Norway

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The level of self-employment varies significantly among immigrants from different countries of origin. The objective of this research is to examine the relationship between national culture, human capital in the form of educational attainment in the country of origin and self-employment rates among first-generation immigrants in Norway. Empirical secondary data on self-employment among immigrants from 53 countries residing in Norway in 2004 was used. Five different hypotheses were developed and tested using hierarchical regression analysis. The findings suggest that immigrants from countries with low power distance are more likely to become self-employed. However, other dimensions of cultural attributes, such as the home-country's uncertainty avoidance, masculinity/femininity and individualism/collectivism were not significantly associated with immigrants' self-employment rate. Finally, and most notably, the average educational attainment in the country of origin was found to be significantly positively associated with self-employment among immigrants. The study concludes with practical implications and suggestions for future research.

*Keywords:* immigrant entrepreneurship; national culture; human capital; education; self-employment; Norway.

## 1. Introduction

Owing to the rapidly increasing number of immigrant-owned businesses in western countries ethnic and immigrant entrepreneurship has received increased attention in the literature. One particular point of interest is explaining the variations in the level of entrepreneurial activity between different groups of immigrants.

In a number of countries the same groups of immigrants have levels of self-employment exceeding the national average. For example, the level of self-employment is highest among Asian immigrants in Canada (Hiebert 2003), in the USA (Camarota 2000) and in the UK (Barrett *et al.* 2002). Collins (2002) showed that Asian immigrants have had the highest rate of self-employment in Australia during the last 20 years or more. East Asians had the highest rate of self-employment in Canada in 1986 and 1996 (Frenette 2002). The percentage of self-employed was highest among Asian immigrants in the USA as early as in 1980 (Portes and Zhou 1992). These observations confirm that in particular cases Asians stay on top of self-employment ratings not only across geographical borders, but also at different points of time. It is reasonable to expect that the stability of the inter-group differences can be explained best by factors that are stable in time and are not related to fluctuations in

the host-country environment, i.e. factors found in the immigrant's home-country. Among numerous individual and group level concepts the national culture (Hofstede 2001) has proven to distinguish nations from each other and to be stable over long periods of time. Large differences have also been observed among countries with respect to the average educational attainment in the population (World Bank 2006). Human capital, often measured as years of formal education, has been frequently and successfully used as a predictor of individual's ability to identify and effectively exploit entrepreneurial opportunities (see Shane 2004 for a recent review of this literature). It may be logical to expect that immigrants coming from countries with a low average level of education will meet particular problems with establishing and managing a business in a post-industrial country such as Norway.

Thus, the purpose of this research is to investigate the relationships between national culture, the average educational attainment and self-employment among immigrants in Norway. The following research question is in focus: do immigrants' home-country national culture and educational attainment influence the self-employment rates among first generation immigrants in Norway? To the present authors' knowledge, no previous study has so far used quantitative data on national culture to predict intergroup differences in self-employment rates among immigrants in a country. Testing the relationships between education and self-employment rate on the group level in the Norwegian context represents another contribution of this study.

The paper is structured as follows. First, alternative theoretical perspectives on entrepreneurship among immigrants and ethnic minorities are presented, and five hypotheses are derived. This is followed by the methodological section, focusing on the empirical data and operationalizations. Third, the results of the multiple regression analyses are presented. This is followed by the conclusions, practical recommendations and proposals for further research.

## 2. Conceptual framework

### 2.1 *Theories on immigrant entrepreneurship*

At the societal level structural barriers can prevent particular groups of immigrants and ethnic minorities from competing with the native born on an equal basis in the mainstream economy (Zhou 2004). As a consequence, some immigrants and minorities can be pushed into self-employment to a larger extent than others. Racial, national or ethnic discrimination causes blocked mobility for immigrants. It has been reported that predicted earnings differential between self-employment and paid employment has a positive effect on the probability of being self-employed (Johansson 2000). In the absence of the relevant empirical evidences from Norway, the study conducted by Hammarstedt (2006) suggests that discriminatory wages in the wage-employment sector may push immigrants toward self-employment in Sweden. Legal restrictions which discriminate against particular ethnic groups provide a base for the middleman minority theory (Bonacich 1973, Light and Bonacich 1988). According to this theory, groups which are restricted in their economic and juridical rights are forced into self-employment. Intragroup solidarity, practising of original traditions, monoethnic marriages, and the use of home-land language characterize middleman minorities. However, the middleman minority situation seems to be more

of an exception rather than a rule. Thus, it is not likely to be relevant for a large number of immigrant groups in Norway.

Geographical concentration of a considerable number of immigrants of the same origin, which leads to protected market and access to co-ethnic labour, have traditionally been used to explain high self-employment rates among particular groups of migrants (Evans 1989, Zhou 1992). Ethnic resources are more important for some ethnic groups compared to others. In Norway, immigrants from Tunisia, Morocco, Palestine and Greece have been found to avoid reliance on co-ethnics, while Pakistanis perceive their ethnic group as an important source of resources needed for business venturing (Krogstad 2002). Moreover, the demand for ethnic goods and exploitation of co-ethnic labour plays a critical role in economic adaptation only for a limited number of immigrant groups, which tend to form enclaves under certain conditions. However, ethnic enclave economies are rare, even in the USA (Light *et al.* 1994). This approach is therefore not sufficient to cover the broad spectrum of variations in self-employment rates among heterogeneous groups of immigrants (Li 2001).

At the group level, the phenomenon of immigrant entrepreneurship is associated with group-specific cultural values, behavioural patterns, distinct group traits, social structures, collective resources and coping strategies (Zhou 2004). Light's cultural theory (1972) states that some groups of immigrants are more predisposed to entrepreneurship than others due to their sociocultural background.

At the individual level, education, gender and duration of residence in the country are found to influence the propensity for entrepreneurship among immigrants (Hammarstedt 2004, 2006). By the same token, Li (2001) concluded that older immigrants arriving in better economic years, staying longer in the host-land, and possessing higher educational levels have higher odds of self-employment. Thus, demographic characteristics should not be ignored when studying self-employment among immigrants.

A large difference between levels of self-employment is observed across countries (Wildeman *et al.* 1998). For example, the proportion of self-employed in the work force is about three times as high in Turkey as in Norway (OECD 1998). The Global Entrepreneurship Monitor (2005) also reports large national differences in the proportion of business owners and early-stage entrepreneurial activity. Immigrants from countries with relatively large self-employment rates are more likely to have previous experience of self-employment before migration. Consequently, such immigrants are expected to be better prepared for starting business after migration. However, the results of empirical testing are mixed with respect to the effect of the home-country self-employment rates. The results reported by Hammarstedt (2001) and Yuengert (1995) supported this relationship, while Fairlie and Meyer (1996) found no evidence for such a relationship. The Hammarstedt's survey was carried out in Sweden, whereas the last two studies were conducted in the USA.

The proportion of self-employed also changes as the economy of a country changes. The move from a predominantly rural economy with a high level of business ownership to an industrial one, where large public corporations dominate and then again to a post-industrial economy causes a U-shaped curve between economic development and self-employment (Thurik and Wennekers 2004, Sternberg and Wennekers 2005). Differences in business ownership rates between countries seem to be persistent despite this U-shaped pattern (Wennekers *et al.* 2003). Consequently, cultural aspects, which are relatively stable over time, are expected to play an important role in explaining the variations in the level of self-employment

in different countries. It has been argued that national culture, at least to some extent, influences the level of self-employment (Hofstede *et al.* 2004). The most straightforward and frequently used method of assessing the relationship between national culture and entrepreneurship is through multinational research. In such studies the characteristics of the culture interact with economic factors in the country to determine the level of self-employment (Wennekers *et al.* 2003).

It is generally argued that cultural (Hayton *et al.* 2002) and economic factors (Reynolds *et al.* 1994), as well as the interaction between them (Baughn and Neupert 2003), determine the level of self-employment in a country. However, comparing countries is not an easy task because of the vast variety of economic, political and historical factors which also have an impact on the rate of self-employment. To which extent the differences in the levels of self-employment are caused by national culture variations or by variations in other factors are therefore difficult to assess in multinational surveys. Several single country studies which use the individual or the region as the unit of analysis support the idea that cultural attributes of different ethnic groups influence entrepreneurial behaviour (Greene 1997, Basu and Altinay 2002, Dyer and Ross 2003, Bouncken 2004).

Owing to the influence of the country-specific economic conditions comparing entrepreneurs in several countries is a complicated way of assessing the direct effect of national culture. After migration to one particular country, individuals belonging to different cultures face the same economic conditions. The environmental conditions are then controlled for, while the group differences, including culture and educational characteristics, possibly will explain differences in self-employment rates.

## 2.2 *National culture*

Culture can be defined as ‘the collective programming of the mind which distinguishes the members of one group or category of people from another’ (Hofstede 1997: 5). Scholars have identified a number of different cultural dimensions. Hamper-Turner and Trompenaars (2000), for example, distinguished between the following dimensions of culture: universalism/particularism, individualism/communitarianism, specificity/diffuseness, achieved/ascribed status, inner/outer direction, and sequential/synchronous time. Inglehart *et al.* (1998) analysed data for 43 countries and found two important dimensions of national culture: well-being versus survival, and secular-rational versus traditional authority. Hall and Hall (1990) distinguished between cultural factors concerning velocity, context, space and time. However, the far most cited author on cultural dimensions is Hofstede (2001) who identified the following five cultural dimensions: power distance, individuality, masculinity, uncertainty avoidance, and long/short-term orientation.

Hofstede (2001: 83) defines power distance in the following way:

The power distance between a boss B and a subordinate S in a hierarchy is the difference between the extent to which B can determine the behaviour of S and the extent to which S can determine the behaviour of B.

National culture reflects the level of power distance that is accepted by both the most and the less powerful members of the society and that is supported by the social environment. Thus, the power distance refers to the acceptance of inequality. The index used to measure the power distance (PDI) was derived from country mean

scores on three survey questions regarding perceptions of subordinates' actual decision-making styles, and the decision-making style that subordinates preferred in their bosses. PDI scores bring information about dependence relationships in a country. In small power distance countries there is limited dependence of subordinates on bosses, and a preference for consultation. The emotional distance between them is relatively small. In large power distance countries there is considerable dependence of subordinates on bosses and the emotional distance is large (Hofstede 1997).

The Individualism Index (IDV) based on country mean answer scores on 14 'work goals' questions, measures a position on the Individualism-Collectivism scale. Individualism stands for a society in which the ties between individuals are loose. In individualistic cultures, social identity is based on individual contribution. Basic social values emphasize personal initiative and achievement. Autonomy, variety, pleasure, and personal financial security take precedence over group loyalty. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups which, throughout people's lifetime, continue to protect them in exchange for unquestioning loyalty (Hofstede 2001: 225). People from more individualistic cultures value jobs which leave them sufficient time for their personal or family life. For such people it is important to have challenging work and to have freedom to adopt their own approach to work. In relatively collectivistic societies people emphasize training opportunities, good physical working conditions and the ability to use their skills and abilities as the most important aspects of a job (Hofstede 1997).

Masculinity stands for a society in which social gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap (Hofstede 2001: 297). People in highly masculine societies tend to prize aggressiveness and performance in terms of ego boosting, wealth, and recognition. The Masculinity Index (MAS) is a result of factor analysis of the answers to 14 questions related to working goals. The decisive reason for labelling this dimension 'masculinity versus femininity' was that this dimension was the only one (in Hofstede's study) on which the men and women scored consistently differently (Hofstede 1997).

Uncertainty avoidance is 'the extent to which the members of a culture feel threatened by uncertain or unknown situations' (Hofstede 2001: 161). In low uncertainty avoidance cultures, the inherent uncertainty of life is more easily accepted. It is believed that conflict and competition can be controlled within the rules of 'fair play' and used constructively. In low uncertainty avoidance countries there is more willingness to take risks, and achievement is often recognized in terms of pioneering effort. In high uncertainty avoidance countries, there is a greater fear of failure, a lower willingness to take risks, lower level of ambition, and lower tolerance for ambiguity (Hofstede 2001). The Uncertainty Avoidance Index (UAI) was derived from country mean scores on the survey questions dealing with rule orientation, employment stability and stress.

The aggregate psychological trait approach is adopted in this study. This approach is based on the idea that if a society contains more people with entrepreneurial values more people will be entrepreneurs (Davidsson 1995). Hypotheses regarding the influence of Hofstede's indexes can be derived from previous empirical studies adopting the same theoretical perspective. Hierarchical social structures are more likely to exist in high-PDI countries (Hofstede 2001).

Consequently, one can speculate that people from nations scoring higher on power distance can be expected to be more satisfied with a fixed place within large and stable hierarchical organizations, than with managing a small business (Shane 1992, 1993, Wildeman *et al.* 1998). However, McGrath *et al.* (1992) found that entrepreneurs demonstrate beliefs associated with higher power distance compared to career professionals. These authors suggested that the entrepreneur may tend to endorse a greater amount of differentiation between themselves and others and, consequently, use entrepreneurship as a route to a higher position in society.

A larger proportion of the population possesses psychological characteristics associated with entrepreneurship in individualistic rather than collective societies (Mueller and Thomas 2001). Such characteristics as the need for autonomy and independence (Sexton and Bowman 1985) and internal locus of control (Brockhaus and Horowitz 1985) are expected to be positively associated with entrepreneurial behaviour.

Masculinity is associated with achievement motivation in McClelland's (1961) terminology (Hofstede 2001). One may expect that people from masculine cultures can satisfy their need for achievement more effectively through self-employment in small business rather than through membership in a large, established organization.

Uncertainty avoidance is expected to be negatively related to self-employment, since individuals from nations with high uncertainty avoidance have stronger emotional needs for rules and procedures, and are therefore likely to prefer employment in established organizations (Shane 1993).

Based on the works by Hofstede (2001), Shane (1992, 1993), Mueller and Thomas (2001) and Wildeman *et al.* (1998), the following four hypotheses were formulated:

*Hypothesis 1:* Controlling for relevant factors, home-country power distance (PDI) is negatively associated with self-employment among immigrants.

*Hypothesis 2:* Controlling for relevant factors, home-country individuality (IDV) is positively associated with self-employment among immigrants.

*Hypothesis 3:* Controlling for relevant factors, home-country masculinity (MAS) is positively associated with self-employment among immigrants.

*Hypothesis 4:* Controlling for relevant factors, home-country uncertainty avoidance (UAI) is negatively associated with self-employment among immigrants.

### 2.3 *Human capital*

General human capital, often measured as years of education and work experience, relates to factors expected to increase the individual's productivity for a wide range of work-related activities (Becker 1993). Based on analysis of numerous empirical studies, Shane (2004) suggests that general human capital and, specifically, education may be related to self-employment in several ways. On an individual level, a well-educated person will be more likely to exploit an entrepreneurial opportunity because the information and skills that education provides will increase their expected returns on opportunity exploitation. Education also improves entrepreneurial judgement by providing people with analytic ability and understanding of the entrepreneurial process. Moreover, an owner's higher education is expected to improve the performance of a business venture. Bruderl *et al.* (1992) argue that human capital



may influence the individual's propensity to stay self-employed through survival of ventures. First, greater human capital increases the founder's productivity, which results in higher profits enhancing business survival. Second, easily observable indicators of human capital, such as education, may be used as screening devices by customers, investors, and other outside actors on whom the survival of enterprise depends. Third, even prior to the business establishment, people with higher human capital are in position to start larger and financially better-equipped businesses because of their higher earnings as employees. Moreover, through their broader employment experience such people are more likely to identify the most lucrative entrepreneurial opportunities. Finally, persons endowed with high human capital are rarely forced into self-employment by acute need for an income and, therefore, have more time to develop detailed business plans. It is argued that education may have a very different impact on self-employment in professional versus non-professional occupations (Beaujot *et al.* 1994). However, the majority of academicians agree that an individual's education is positively related to overall entrepreneurial activity in developed countries.

On the aggregative level, human capital is often used as an independent variable in economic growth studies. Measured as average school attendance rate (Barber 2002) or as percentage of population enrolled at universities and colleges (Habib *et al.* 2000), human capital is positively related to national economic performance. Studying regional variations in start-ups in Sweden, Johannisson (1993) found that the share of the population with a college education was the variable with the highest exploratory power. Thus, one can expect that average educational level will be important when comparing groups of immigrants. The countries, regions, ethnic and other groups extensively endowed with human capital may, therefore, be expected to demonstrate superior ability to establish and manage productive entrepreneurial ventures.

The review of the literature on immigrant entrepreneurship reveals somewhat complex relationships between education and self-employment compared to general entrepreneurship studies. In immigration studies, education obtained in the home country, the host country, as well as the total educational endowment has been measured. In case of entrepreneurship-related studies, the empirical tests provide inconsistent results considering the relationships between these three measures of education and propensity towards self-employment. Li (2001) and Sanders and Nee (1996) found that higher home-country education increases an individual's odds of becoming self-employed. On the other hand, Le (2000) reported the opposite effect both for home-country and host-country education.

When not divided by the country of origin, the total educational level has been found to increase individuals' propensity towards self-employment (Borjas 1986, Borjas and Bronars 1989, Fairlie and Meyer 1996, van Tubergen 2005). The opposite relationships were reported by Cobas (1986), Evans (1989), Clark and Drinkwater (1998) and Hammarstedt (2001). Moreover, the effects of home-country and host-country education may interplay. Beaujot *et al.* (1994) argues that immigrants with low total educational attainment who have acquired some education in the country of settlement have higher chances of being self-employed. Such people have advantages in the form of relevant knowledge about the host-country acquired during the study. Simultaneously, they may have access to relevant ethnic group resources. Immigrants with educational level of approximately bachelor and above acquired in their home country, and who have not accomplished any education in the country of settlement, have also relatively high chances of being self-employed. In this



case the reason is different: such persons suffer from non-recognition of their degrees and inability to find a job corresponding to their educational level. Such immigrants are, therefore, pushed into self-employment in pursuit of the occupation reflecting their ambitions. Immigrants with no proper education at all are expected to be under-represented among the self-employed because of their lack of basic knowledge and understanding of how to establish and manage a business. Immigrants with degrees both from the country of origin and from the host country may experience fewer problems with finding challenging and well-paid jobs in the general labour market, and will, therefore, be less likely to start a business.

Sanders and Nee (1996) suggest that immigrants with higher human capital are more likely to come from the upper classes in the home country, which increases their access to financial capital. Since lack of start-up capital is often cited as a major obstacle for starting a business, one can expect immigrants who are better educated in their home-land to be over-represented among the self-employed.

Regarding the mixed empirical evidence from different countries, one can conclude that the effect of education on immigrants' propensity towards self-employment depends on a context. Within ethnic enclaves, an entrepreneur may survive addressing entirely the loyal co-ethnic customers. Since no large-scale ethnic economies have previously been reported in Norway, it may be expected that immigrant entrepreneurs have to challenge relatively highly educated native competitors. In this case, higher education will be an advantage outside the ethnic economy.

While this paper is focusing on the educational attainment from the home country, an overall positive effect of education is expected in line with the following argument. As a proxy of general human capital, education (regardless of origin) will increase immigrants' chances to identify and successfully exploit entrepreneurial opportunities. Immigrants with higher human capital endowment may learn more effectively about the Norwegian legislation, business procedures, and language, which is essential for venture establishment. Moreover, judged by the level of formal education, well-educated persons have higher chances to gain trust from authorities, banks, suppliers and other native Norwegian stakeholders. Non-recognition of foreign educational degrees may additionally push well-educated immigrants to self-employment. Taking all of these factors into consideration, the following hypothesis is formulated:

*Hypothesis 5:* Controlling for relevant factors, home-country educational attainment is positively associated with self-employment among immigrants.

### 3. Methodology

#### 3.1 Data

In order to test the hypotheses, data on self-employment, gender balances, populations, and spatial distributions from multiple immigrant groups from Statistics Norway for the year 2004 was used. Only groups with a minimum of 100 persons in Norway were included. The threshold group size was decided as a compromise between a desire to include as many countries of origin as possible in the analysis, and a need to exclude small groups where a few self-employed individuals could create a disproportional contribution to the group's self-employment rate.

With respect to the variables chosen for the analysis, no missing values were observed in 53 cases. Only these cases were included in the analysis. The size of the immigrant groups included in the study varied from 20 157 immigrants from Sweden (of whom 979 were self-employed, i.e. 4.86%), to 114 immigrants from Taiwan (of whom 14 were self-employed, i.e. 12.28%). The self-employment rate was highest for immigrants from Taiwan, Hong Kong, Israel and China and lowest among those from Tanzania, Thailand and the Philippines (appendix 1). These figures are similar to empirical findings from other parts of the world. The four immigrant groups which have the highest rate of self-employment in Norway also have among the highest self-employment rates in Canada (Hiebert 2003), in the USA (Fernandez and Kim 1998), and in the UK (Barrett *et al.* 2002).

The latest data on Hofstede's measures of national culture was downloaded for 53 countries from [www.geert-hofstede.com](http://www.geert-hofstede.com) (downloaded 1 November 2005). The data on average educational attainment was acquired from the World Bank (2006). The relevant operationalizations are discussed in the subsequent subsections.

### 3.2 *Self-employment*

Self-employment is a labour-market related parameter, but it is an adequate indicator of entrepreneurial activity (Acs *et al.* 1994, Wennekers *et al.* 2003). Following the definition used by Statistics Norway, all first-generation immigrants receiving income from business activities are classified as self-employed. First generation immigrants are defined as those born abroad, with both parents born abroad also (Statistics Norway 2004). The applied measure of self-employment is the proportion of self-employed from each country among all immigrants from the country aged 16–74 years.

### 3.3 *Culture*

This study is based on the assumption that each national culture is preserved both by individuals living in a particular country and by the immigrants from this country. Hines (1974) argued that cultural values persist, in some cases even to the second generation, but that the persistence of values may vary across immigrant groups. Hofstede (2001) also stated that cultural values are stable over time and that immigrants are unlikely to acquire the underlying values of symbols and rituals in the new environment, but are likely to judge the new culture by the old values. Possibly the most known attempt to operationalize national cultures was made by Hofstede (2001). Four of Hofstede's variables are available for a large number of countries, including all countries from which the largest groups of immigrants come to Norway. The fifth cultural dimension, long/short-term orientation, was not used in the present study because of missing values for a high number of countries.

Hofstede's research has not escaped criticism. Sondergaard (1994) summarized the constraints of Hofstede's studies into three categories. First, it is questioned if data collected between 1968 and 1973 were artefacts of this period. Second, the reliance on a survey of IBM managers and not on a representative sample of the population is often criticized. Third, it is questioned whether the use of only attitude-survey questions was a valid base from which to infer values. Moreover, some critical aspects of culture have not been addressed by Hofstede (Baughn and Neupert 2003).

However, Hofstede's variables have been frequently used in different disciplines (Sivakumar and Nakata 2001) and empirically verified by other researchers (Sondergaard 1994). These dimensions have been previously used in the studies on entrepreneurship and innovation (see Hayton *et al.* 2002 for a review) in non-immigrant samples.

### 3.4 *Human capital*

Average schooling (in the form of enrolment or attainment) is often used as a proxy for human capital (Foldvari and van Leeuwen 2005). Since personal or group level data on home-country educational attainment of immigrants is not readily available from national statistics, the average data for the countries of immigrants' origin are used in this study. Statistical average data from immigrants' home-country have previously been used in other entrepreneurship studies. For example, Ekberg and Hammarstedt (1999) and Yuengert (1995) studied the effect of home-country self-employment, while van Tubergen (2005) focused on GDP and political suppression in the country of origin. The main weakness of such studies is the inability to address the problem of selective migration. A direct comparison of average educational levels in a country and among immigrants from this country to Norway is practically impossible. However, aggregative data from Statistics Norway (2006) show that immigrants from Africa have lower average level of education, compared to Europeans and Asians. That is in line with cross-country data on educational attainment from the World Bank (2006), which are used in this study. Under the present circumstances the average years of school among adults in the country of origin in year 2000 is applied as a measure of home-country educational attainment of immigrants. This measure of education is also related to cultural properties, as societies with limited human capital choose larger families and invest little in each member, while those with abundant human capital do the opposite (Becker 1993). For more details concerning the methodological aspects of cross-country educational data the work by Barro and Lee (2000) may be addressed. The Barro-Lee dataset has frequently been used in the growth literature as a proxy for the amount of education received by the population of a country (see Chen (2004) for examples).

### 3.5 *Control variables*

Many studies have shown that a smaller proportion of women than men start businesses and become self-employed. It is likely that this pattern remains valid across countries and immigration groups (Orderud 2001). In Norway only 15% of immigrants from Thailand are men while the share of men among immigrants from Greece is 77%. Since the gender composition among immigrants of different origin varies dramatically, the percentage of men in each immigrant group is used as a control variable.

Duration of residence in the recipient country is often mentioned as an important control variable when predicting self-employment (Fernandez and Kim 1998, Hammarstedt 2001, Hiebert 2002). A positive relationship between duration of residence and self-employment is expected because it takes time to learn the new language and to get access to useful social networks (Orderud 2001). Based on data

from Statistics Norway concerning the number of first generation immigrants in Norway each year, the average duration of residence for each immigrant group was calculated as follows:

$$D = \frac{\sum [(n_i - n_{i-1}) * (2005 - i)]}{N},$$

where  $D$  = average duration of residence;  $N$  = the number of immigrants in 2004;  $n$  = the number of immigrants in year  $i$ ; and  $i$  = years 1970, 1980, and each year between 1986 and 2004.

A higher rate of self-employment among some groups of immigrants can be attributed to their mediating middlemen position in the host society. Being significantly discriminated, such groups turn to entrepreneurial activities relying on ethnic solidarity (Bonacich and Modell 1980). Tight geographic concentration of immigrants may provide exceptional opportunities for minority entrepreneurs through the availability of co-ethnic clients and employees (Evans 1989). Both the co-ethnic labour force and clients are bounded to the entrepreneurs through cultural linkages (Portes and Bach 1985). Hence, both members of middleman minority groups and cohabitants of an enclave are dependent on living in proximity of each other. In order to control for a possible effect of the spatial distribution of immigrants, two control variables were included: group size and concentration rate. Group size is the total number of immigrants from the country. Concentration rate is the percentage of immigrants from a country living in the county in Norway with the largest number of immigrants from this country. Both variables were log-transformed in order to meet the assumption of normal distribution in regression analysis.

#### 4. Results

Correlations between all the variables considered in this study and descriptive statistics are shown in table 1. As expected, the percentage of males and the duration of residence are significantly positively correlated with group's self-employment rate. The correlation matrix provides preliminary support for three of the hypotheses. Power distance is significantly negatively correlated with self-employment. Individuality is significantly positively correlated with self-employment. Finally, national educational attainment is significantly positively correlated with self-employment.

The hypotheses were tested using hierarchical multiple regression analysis. First the control variables were entered into a regression, followed by the cultural variables and education. Owing to limitations of the sample and to high correlation between the independent variables, the cultural variables and education were included individually in regression equations along with the control variables. In this way the number of independent variables never exceeded five, preserving sufficient degrees of freedom and reducing problems concerning multicollinearity. This procedure has previously been used in research on the effect of culture (Shane 1993).

Table 2 shows that power distance is significantly negatively associated with self-employment, supporting hypothesis 1. The effect of individuality disappears when the control variables are included in a regression, perhaps because The Individualism Index is highly correlated with immigrants' average time of residence in Norway.

**Table 1. Descriptive statistics and pearson correlations (N=53).**

|                                      | Mean  | SD    | 1      | 2        | 3        | 4        | 5        | 6       | 7     | 8      | 9       |
|--------------------------------------|-------|-------|--------|----------|----------|----------|----------|---------|-------|--------|---------|
| <i>Control variables</i>             |       |       |        |          |          |          |          |         |       |        |         |
| 1. Gender                            | 47.41 | 11.58 | 1      |          |          |          |          |         |       |        |         |
| 2. Duration of residence             | 18.00 | 7.15  | 0.218  | 1        |          |          |          |         |       |        |         |
| 3. Group size                        | 3197  | 4578  | 0.089  | 0.034    | 1        |          |          |         |       |        |         |
| 4. Concentration rate                | 30.99 | 10.55 | 0.239  | -0.293*  | 0.000    | 1        |          |         |       |        |         |
| <i>Cultural variables</i>            |       |       |        |          |          |          |          |         |       |        |         |
| 5. Power Distance Index (PDI)        | 57.30 | 20.42 | -0.154 | -0.661** | -0.204   | 0.392**  | 1        |         |       |        |         |
| 6. Individualism Index (IDV)         | 44.94 | 24.12 | 0.255  | 0.709**  | 0.208    | -0.499** | -0.680** | 1       |       |        |         |
| 7. Masculinity Index (MAS)           | 51.51 | 16.92 | -0.003 | 0.215    | -0.369** | -0.029   | 0.021    | 0.101   | 1     |        |         |
| 8. Uncertainty Avoidance Index (UAI) | 64.00 | 22.49 | 0.115  | -0.036   | -0.254   | 0.191    | 0.071    | -0.148  | 0.131 | 1      |         |
| <i>Education</i>                     |       |       |        |          |          |          |          |         |       |        |         |
| 9. Years of School                   | 7.58  | 2.60  | -0.076 | 0.640**  | 0.087    | -0.460** | -0.614** | 0.657** | 0.103 | -0.021 | 1       |
| <i>Dependent variable</i>            |       |       |        |          |          |          |          |         |       |        |         |
| 10. Self-employment rate             | 4.88  | 2.26  | 0.271* | 0.421**  | -0.066   | 0.023    | -0.439** | 0.271*  | 0.135 | -0.105 | 0.469** |

\* $p \leq 0.05$  (2-tailed).  
 \*\* $p \leq 0.01$  (2-tailed).

**Table 2. Regression results: Self-employment as the dependent variable ( $N = 53$ ).**

|   | <i>Model 1</i><br><i>Control</i><br><i>variables</i><br><i>only</i> | <i>Model 2</i><br><i>Power</i><br><i>Distance</i><br><i>Index (PDI)</i> | <i>Model 3</i><br><i>Individualism</i><br><i>Index (IDV)</i> | <i>Model 4</i><br><i>Masculinity</i><br><i>Index (MAS)</i> | <i>Model 5</i><br><i>Uncertainty</i><br><i>Avoidance</i><br><i>Index (UAI)</i> | <i>Model 6</i><br><i>Education</i> |
|---|---|---|--|--|--|------------------------------------|
| <i>Control variables</i>                |   |   |  |  |  |                                    |
| 1. Gender                               | 0.200   | 0.161   | 0.186  | 0.199  | 0.214  | 0.281*                             |
| 2. Duration of residence                | 0.402**   | 0.186   | 0.367*   | 0.406**  | 0.405**  | 0.090                              |
| 3. Group size (Ln) <sup>†</sup>         | -0.243  | -0.268*   | -0.255   | -0.247   | -0.269*  | -0.252*                            |
| 4. Concentration rate (Ln) <sup>†</sup> | 0.032   | 0.148   | 0.057  | -0.034   | 0.067  | 0.150                              |
| <i>Cultural variables</i>               |   |   |  |  |  |                                    |
| 5. Power Distance Index                 |   | -0.398*   |  |  |  |                                    |
| 6. Individualism Index                  |   |   | 0.066  |  |  |                                    |
| 7. Masculinity Index                    |   |   |  | 0.015  |  |                                    |
| 8. Uncertainty Avoidance Index          |   |   |  |  | -0.176   |                                    |
| <i>Education</i>                        |   |   |  |  |  |                                    |
| 9. Years of school                      |   |   |  |  |  | 0.519**                            |
| $R^2$                                   | 0.272   | 0.349   | 0.274  | 0.273  | 0.301  | 0.407                              |
| Adjusted $R^2$                          | 0.212   | 0.280   | 0.197  | 0.195  | 0.227  | 0.344                              |
| $F$ value                               | 4.495**   | 5.049***  | 3.545**  | 3.524**  | 4.051**  | 6.456***                           |
| $\Delta R$ square                       | -   | 0.077   | 0.001  | 0.000  | 0.029  | 0.135**                            |
| $F$ change                              | -   | 5.558*  | 0.089  | 0.013  | 1.928  | 10.678**                           |

The coefficients reported are standardized betas.

\* $p \leq 0.05$  (2-tailed).

\*\* $p \leq 0.01$  (2-tailed).

\*\*\* $p \leq 0.001$  (2-tailed).

<sup>†</sup>The variable is logarithmically transformed.

Hence, hypothesis 2 is not supported. The effect of the remaining two cultural variables is not significant. Hypotheses 3 and 4 are not supported. Among all the variables considered in this the study, educational attainment has the most significant influence on immigrants' self-employment level, providing strong support for hypothesis 5.

While the control variables alone explain 21.2% of variation in self-employment rates, adding PDI to the equation helps to improve the explanation to 28.0% of the variation. Adding educational attainment to the control variables explains as much as 34.4% of variation of the dependent variable. The significant change of the  $F$  value (+5.558) confirms that PDI explains a significant proportion of the variance in the self-employment rate among different groups of immigrants. The significant improvement in  $R^2$  (+0.135) and change in the  $F$  value (+10.678) compared to the base model indicate that home-country educational level is important to consider when trying to explain immigrant groups' self-employment rate.

## 5. Conclusions

This study focused on immigrants' national culture measured through four of Hofstede's dimensions and on educational attainment in immigrants' countries of origin. Controlling for relevant factors, power distance and education proved to have a significant impact on the immigrant group's level of self-employment. The other cultural factors were also correlated with the self-employment rate in the expected direction, but they failed to have a significant effect in the multiple regressions. As far as the present authors are aware, this study is the first to link immigrants' national

culture and national educational level directly to the differences in self-employment rate among a wide range of immigrant groups. In line with Hofstede's (2001) arguments, the findings show that first generation immigrants remain embedded in their original national culture despite the influences of the host country cultural environment.

In this study, the hypothesis concerning the positive relationship between education attainment and self-employment among immigrants is strongly supported. One can speculate that entering into self-employment in a new country of residence requires intensive learning. Thus, people from countries with high average educational levels, who may learn language, formal rules, and new business procedures more effectively, are more likely to start a business and become self-employed. Supporting the blocked mobility thesis, this effect can be magnified by non-recognition of degrees acquired outside Norway, which additionally pushes highly-educated immigrants into self-employment. Another plausible explanation for the positive relationships between home-country education and group's self-employment rate concerns the perceptions of Norwegian banks, suppliers, and other stakeholders. Better-educated immigrants may gain more trust from natives, which is important for establishing and conducting business outside the ethnic economy.

In this study secondary data was used to test the hypotheses. Measures of national culture and school attainment were taken from surveys carried out in the immigrants' home countries. This research design has its limitations. First, some immigrants may not belong to the dominant culture in their home country, because they have a particular ethnic or religious background. Second, there is a chance that people who migrate can differ from those who decide to stay with regard to their perceptions of culture or educational level. However, all research using secondary national data share this limitation. There is definitely a need for more individual level studies on relationships between national culture, human capital and immigrant entrepreneurship. Such studies should, whenever possible, address the question of selective migration which has not so far attracted considerable attention in the entrepreneurship literature. Moreover, it should be noted that the generalizability of this study is somewhat limited due to some specific conditions in Norway. In Norway, the majority of immigrant groups are distributed among different regions in the same proportions, reducing the importance of spatial dimensions for differences in self-employment. Before World War II, immigration to Norway was almost non-existent (Tjelmeland and Brochmann 2003), in contrast to countries with long traditions of immigration such as the USA, Canada and Australia. In such countries the enclave economy may be more important.

This study has several practical implications. Encouraging entrepreneurship among immigrants is recognized to be an important task for politicians in many countries including Norway. Policy-makers should keep in mind that immigrants from some nations are more predisposed for self-employment because of their cultural background. At the same time, people from some nations are more endowed with general human capital in a form of education that improves their ability to start business in their new host country. Government programmes should take these differences into consideration when designing support systems for immigrant entrepreneurs. One can expect that insufficient human capital may hinder some groups of immigrants from participating in the economic life under the same conditions as natives. Thus, improving the educational attainment of under-educated



immigrants should be considered as a primary instrument of attracting such immigrants to self-employment.

The findings presented here may also have implications for our foreign aid to developing countries. While culture may be hard to change, efforts should be made to try to reduce the power distance in some countries. It is also possible that improving educational systems in developing countries may increase the number of future immigrants with entrepreneurial capabilities.

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**Appendix 1. Hofstede's index scores, average years of education in the countries (year 2000), and self-employment rates for 53 immigrant groups in Norway (year 2004).**

| Country        | Power Distance Index (PDI)* | Individualism Index (IDV)* | Masculinity Index (MAS)* | Uncertainty Avoidance Index (UAI)* | Average years of school** | Self-employment rate (%) among immigrants *** |
|----------------|-----------------------------|----------------------------|--------------------------|------------------------------------|---------------------------|---|
| Argentina      | 49                          | 46                         | 56                       | 86                                 | 8.83                      | 5.93  |
| Australia      | 36                          | 90                         | 61                       | 51                                 | 10.92                     | 5.18  |
| Austria        | 11                          | 55                         | 79                       | 70                                 | 8.35                      | 7.24  |
| Belgium        | 65                          | 75                         | 54                       | 94                                 | 9.34                      | 6.24  |
| Brazil         | 69                          | 38                         | 49                       | 76                                 | 4.88                      | 2.32  |
| Canada         | 39                          | 80                         | 52                       | 48                                 | 11.62                     | 5.43  |
| Chile          | 63                          | 23                         | 28                       | 86                                 | 7.55                      | 2.29  |
| China          | 80                          | 20                         | 66                       | 40                                 | 6.35                      | 7.69  |
| Colombia       | 67                          | 13                         | 64                       | 80                                 | 5.27                      | 2.98  |
| Czech Republic | 57                          | 58                         | 57                       | 74                                 | 9.48                      | 5.86  |
| Denmark        | 18                          | 74                         | 16                       | 23                                 | 9.66                      | 6.81  |
| Ecuador        | 78                          | 8                          | 63                       | 67                                 | 6.41                      | 3.43  |

(continued)

## Appendix 1. Continued.

| Country      | Power Distance<br>Index (PDI)* | Individualism<br>Index (IDV)* | Masculinity<br>Index (MAS)* | Uncertainty<br>Avoidance<br>Index (UAI)* | Average<br>years<br>of school** | Self-employment<br>rate (%) among<br>immigrants *** |
|--------------|--------------------------------|-------------------------------|-----------------------------|--|---------------------------------|---|
| Egypt        | 80                             | 38                            | 52                          | 68                                       | 5.51                            | 6.87  |
| Finland      | 33                             | 63                            | 26                          | 59                                       | 9.99                            | 4.85  |
| France       | 68                             | 71                            | 43                          | 86                                       | 7.86                            | 3.78  |
| Germany      | 35                             | 67                            | 66                          | 65                                       | 10.2                            | 5.46  |
| Ghana        | 77                             | 20                            | 46                          | 54                                       | 3.89                            | 1.72  |
| Greece       | 60                             | 35                            | 57                          | 112                                      | 8.67                            | 7.25  |
| Hong Kong    | 68                             | 25                            | 57                          | 29                                       | 9.41                            | 10.68   |
| Hungary      | 46                             | 55                            | 88                          | 82                                       | 9.12                            | 4.57  |
| India        | 77                             | 48                            | 56                          | 40                                       | 5.06                            | 5.56  |
| Indonesia    | 78                             | 14                            | 46                          | 48                                       | 4.99                            | 2.66  |
| Iran         | 58                             | 41                            | 43                          | 59                                       | 5.31                            | 4.07  |
| Iraq         | 80                             | 38                            | 52                          | 68                                       | 3.95                            | 1.86  |
| Ireland      | 28                             | 70                            | 68                          | 35                                       | 9.35                            | 6.97  |
| Israel       | 13                             | 54                            | 47                          | 81                                       | 9.6                             | 8.62  |
| Italia       | 50                             | 76                            | 70                          | 75                                       | 7.18                            | 5.10  |
| Japan        | 54                             | 46                            | 95                          | 92                                       | 9.47                            | 5.30  |
| Kenya        | 64                             | 27                            | 41                          | 52                                       | 4.20                            | 1.89  |
| Malaysia     | 104                            | 26                            | 50                          | 36                                       | 6.80                            | 5.02  |
| Mexico       | 81                             | 30                            | 69                          | 82                                       | 7.23                            | 2.63  |
| Netherlands  | 38                             | 80                            | 14                          | 53                                       | 9.35                            | 6.41  |
| New Zealand  | 22                             | 79                            | 58                          | 49                                       | 11.74                           | 7.23  |
| Nigeria      | 77                             | 20                            | 46                          | 54                                       | 1.02                            | 3.26  |
| Pakistan     | 55                             | 14                            | 50                          | 70                                       | 3.88                            | 6.83  |
| Peru         | 64                             | 16                            | 42                          | 87                                       | 7.58                            | 3.62  |
| Philippines  | 94                             | 32                            | 64                          | 44                                       | 8.21                            | 1.72  |
| Poland       | 68                             | 60                            | 64                          | 93                                       | 9.84                            | 3.16  |
| Portugal     | 63                             | 27                            | 31                          | 104                                      | 5.87                            | 2.30  |
| Sierra Leone | 77                             | 20                            | 46                          | 54                                       | 2.40                            | 3.37  |
| Singapore    | 74                             | 20                            | 48                          | 8  | 7.05                            | 3.38  |
| South Africa | 49                             | 65                            | 63                          | 49                                       | 6.14                            | 5.53  |
| South Korea  | 60                             | 18                            | 39                          | 85                                       | 10.84                           | 4.72  |
| Spain        | 57                             | 51                            | 42                          | 86                                       | 7.28                            | 3.99  |
| Sweden       | 31                             | 71                            | 5                           | 29                                       | 11.41                           | 4.86  |
| Switzerland  | 34                             | 68                            | 70                          | 58                                       | 10.48                           | 5.61  |
| Taiwan       | 58                             | 17                            | 45                          | 69                                       | 8.76                            | 12.28   |
| Tanzania     | 64                             | 27                            | 41                          | 52                                       | 2.71                            | 1.65  |
| Thailand     | 64                             | 20                            | 34                          | 64                                       | 6.50                            | 1.70  |
| Turkey       | 66                             | 37                            | 45                          | 85                                       | 5.29                            | 3.25  |
| UK           | 35                             | 89                            | 66                          | 35                                       | 9.42                            | 6.00  |
| Uruguay      | 61                             | 36                            | 38                          | 100                                      | 7.56                            | 6.25  |
| USA          | 40                             | 91                            | 62                          | 46                                       | 12.05                           | 5.05  |

Sources: \*Hofstede (2001).

\*\*World Bank (2006).

\*\*\*Statistics Norway (2005), special tabulation.