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Illegal Entrepreneurship Experience

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Illegal entrepreneurship experience:
Does it make a difference for business performance and motivation?

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Abstract

Existing studies show a positive relationship between business development and conventional human capital as measured by formal education attainment, previous business experience and prior management experience. In this paper, we explore whether illegal entrepreneurship experience (IEE), an unconventional form of human capital is related to the performance and motivation of existing legal businesses in a transition context. Based on data from 399 private business owners in Lithuania, our regression results indicate that IEE is significantly associated with subjective measures of business motivation. It is likely that the more motivated and enthusiastic entrepreneurs started as soon as possible or even earlier and have maintained their motivation throughout. An objective performance measure, i.e. business turnover, is affected by IEE for certain groups of entrepreneurs. Especially younger and more highly educated entrepreneurs with IEE have proven to be able to convert and apply their IEE to a market oriented setting. These results, therefore, do partly support the notion that prior experience in the black or gray market under a centrally planned economic system may provide valuable human capital for entrepreneurs in a more open-market oriented setting. We conclude that IEE is productive for specific types of entrepreneurs and that it can more generally be seen as a selection device for motivated entrepreneurs.

Keywords: entrepreneurship, human capital, illegal entrepreneurship, transition economy

JEL-codes: J21, J23, J24; J49; L25; M13; O17; P31

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Abstract

Existing studies show a positive relationship between business development and conventional human capital as measured by formal education attainment, previous business experience and prior management experience. In this paper, we explore whether illegal entrepreneurship experience (IEE), an unconventional form of human capital is related to the performance and motivation of existing legal businesses in a transition context. Based on data from 399 private business owners in Lithuania, our regression results indicate that IEE is significantly associated with subjective measures of business motivation. It is likely that the more motivated and enthusiastic entrepreneurs started as soon as possible or even earlier and have maintained their motivation throughout. An objective performance measure, i.e. business turnover, is affected by IEE for certain groups of entrepreneurs. Especially younger and more highly educated entrepreneurs with IEE have proven to be able to convert and apply their IEE to a market oriented setting. These results, therefore, do partly support the notion that prior experience in the black or gray market under a centrally planned economic system may provide valuable human capital for entrepreneurs in a more open-market oriented setting. We conclude that IEE is productive for specific types of entrepreneurs and that it can more generally be seen as a selection device for motivated entrepreneurs.

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Executive Summary

There is growing evidence in existing theoretical and empirical literature that shows the positive influence of conventional human capital variables such as formal education and previous work experience on business performance. But there has been little empirical work done on the influence of unconventional forms of human capital such as illegal entrepreneurship experience. In this article, we explore the effects of illegal entrepreneurship experience (IEE) on the performance and motivation of private 'legal' businesses. In general, we would expect IEE to provide positive influences on both business performance and motivation.

Several empirical studies have been conducted on the relationship between IEE and the probability of self-employment in a developed market context or a transition context. However the relationship between IEE and business performance has not yet been investigated. This study aims to fill this knowledge gap by analyzing the influence of IEE on business performance and motivation.

The transition from a centrally planned economic system to a free market system such as in the case of Lithuania provides an interesting case study for exploring IEE. Throughout most of the period of central planning, private entrepreneurship activities were highly restricted[1] but in post-Soviet Lithuania, private enterprise has been legalized.

Though IEE obtained within centrally planned economies is a historical phenomenon, it may provide insights to policy measures that exploit the significance of illegal business experience for legal business performance today. For example, if the relationship between business performance and IEE is found to be a positive one, governments and capital suppliers could screen for these characteristics in order to select and support a more effective pool of entrepreneurs.

Our analysis is based on survey data collected by one of the authors in Lithuania. The sample size is made up of 399 business owner respondents, our empirical equivalent of entrepreneurship.

[1] "It is difficult to imagine a regime more hostile towards entrepreneurship than the centrally planned economies of Eastern Europe" (Earle and Sakova, 2001: 6).

Twenty two percent of the respondents have illegally gathered experience as an entrepreneur, i.e. before this labor market choice became a legal possibility. These business owners are remarkably similar in terms of most of their personal characteristics to the sample as a whole.

We empirically test our hypotheses and research question by using regression analyses to test the influence of a number of different types of human capital variables on business performance and motivation. In our analysis we use three objective measures for business performance: firm size, business turnover and business financial success. We also use two subjective measures for business motivation: intention to continue in business and intention to grow.

Our overall results indicate that IEE is not associated with business performance. These results tend to undermine the notion that prior experience in the black or gray market under one economic system may provide valuable human capital for entrepreneurs in a more open-market oriented setting. It also indicates that these entrepreneurs were in general not able to convert their illegally acquired experiences to enhance business performance in a market-oriented economy. These results highlight the difficulties of transferring knowledge and skills obtained under one economic system to another. Similar difficulties have been encountered in transitional labor markets in general.

However, a closer look at our results that relate to business performance indicate that some specific groups of the population of Lithuanian entrepreneurs with IEE have been able to benefit from their IEE within a market setting: Younger entrepreneurs, those with a university education and IEE gained in the trade sector experience significantly higher business turnovers today. These entrepreneurs hence, were able to convert their illegally acquired experience to enhance business performance in a market-oriented economy. Therefore, these entrepreneurs form an interesting target group for supportive policy measures.

With respect to business motivation, we do find evidence for a positive association between IEE and motivation (to continue one's business) in general. This result supports the hypothesis that people who engaged in illegal entrepreneurship, which must have been costly in terms of

effort and risk, were the people who gained the highest utility from doing so and that therefore illegal experience can be seen as a signal for motivation. Moreover, since the costs in terms of effort and risk were substantial, these activities must have been conceived as investments with quite a long pay back period: this is an additional explanation for the continued high levels of motivation of these entrepreneurs. These results have implications for governmental training programs. It may be useful to screen for illegal business experience as a proxy for entrepreneurial motivation. These individuals may in turn provide the highest return for training program investments.

Further research on IEE is needed to deepen our understanding of its possible influences on legal entrepreneurial development. Specific studies measuring the length of illegal entrepreneurial activity as well as the type, sector and size of operations could provide interesting distinctions between entrepreneurial endowments.

1. INTRODUCTION

Human capital theory maintains that knowledge provides individuals with increases in their cognitive abilities, leading to more productive and efficient potential activity (Schultz, 1959; Becker, 1964; Mincer, 1974). In general, human capital theory predicts that higher levels of education and labor market experience are associated with higher earnings. Such a relationship between earnings and human capital has been demonstrated empirically for wage earners (see Ashenfelter et al. 1999 for a meta-analysis) as well as for entrepreneurs, the focus of our study.

The majority of studies investigating the relationship between business performance and human capital have found this relationship to be positive. Education, previous business experience and prior management experience are forms of human capital that benefit the business owner. These positive relationships were demonstrated convincingly by recent meta-analyses for hundreds of such studies pertaining to both developed (Van der Sluis et al., 2003a) and developing countries (Van der Sluis et al, 2003b) and, to a much lesser extent, in transition economies (Johnson and Loveman, 1995; Mathijs and Vranken, 2001). In addition, studies show that human capital can act as a determinant for self employment (Bates, 1995).

Current research has been focused on investigating conventional forms of human capital such as previous work experience, education and age. Few studies have been conducted on unconventional forms of human capital. Fairlie (2002) has conducted a study on the influence of illegal drug dealing experience on the choice for self-employment and Earle and Sakova (2000, 2001) have investigated the effects of 'gray market' experience on raising the probability to become self-employed in the transitional context. In our study, we focus on the effect(s) of IEE on business *performance* and *motivation* in a transition setting.

The transition from a centrally planned economic system to a free market system such as in the case of the former Soviet Union (FSU) countries provides an interesting case study for exploring IEE. Specifically, Lithuania provides an excellent case study for evaluating the effects

of illegal human capital on business ownership as Lithuania has chosen to rapidly switch from a centrally planned economy to a market-based economy.

As in other FSU countries, very limited forms of private business ownership were previously allowed in Soviet Lithuania until the mid 1980s[2]. In 1987 limited forms of cooperative style enterprises were permitted[3]. A year after regaining independence in 1991, Lithuania embarked on an ambitious stabilization and reform program supported by the International Monetary Fund and the World Bank, which allowed for all forms of private enterprises. Lithuania is expected to join the European Union in May 2004. We took a sample from the Lithuanian population of entrepreneurs with and without IEE in 2000.

The skills developed through illegal private business activities under socialist systems were not acquired with the expectation that they would ultimately be useful in the completely different setting of transition to the market (Earle and Sakova, 2001). Whether such prior experience in the black or gray markets provide valuable human capital for entrepreneurs in a more market-oriented 'open' setting has implications for the evaluation of the role of the 'unofficial economy' in economic development (Johnson et al. 1997). In essence, though IEE obtained within centrally planned economies is a unique and historical phenomenon, it may provide insights to the significance of illegal business experience for legal business performance in a broader context.[4]

This paper contributes to the existing literature by exploring the influence of a form of 'illegal' human capital on business performance and motivation of legally operating businesses in the context of transition. Business performance is measured using objective criteria such as firm size, business turnover and business financial success while business motivation is measured through subjective criteria by means of intention to continue in business and to grow.

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[2] Such as sale of produce grown on private garden plots and the sale of handicrafts.
[3] Under the Perestroika program propagated by the then Soviet leader M. Gorbachev.
[4] It should be noted though that illegal entrepreneurial experience is distinctly different from entrepreneurship in illegal activities (see Fadahunsi and Rosa, 2002).

2. THEORY AND HYPOTHESES

There are several theoretical determinants of entrepreneurship selection and performance that have been empirically tested (see the overview article by Le, 1999). Among them are risk attitude, access to financial capital, economic conditions, business acumen, family background, psychological traits, and human capital (Lucas 1978; Jovanovic 1982; Robinson and Sexton, 1994; Parker 1999; Parker 2001). Our focus is on the latter.

2.1 Human capital as determinant of entrepreneurship performance

Human capital theory in general indicates that previous knowledge plays a critical role in intellectual performance. Previous knowledge assists in the integration and accumulation of new knowledge as well as the integrating and adapting to new situations (Weick, 1996). According to Polyani, knowledge may be defined as either tacit or explicit (1967). Tacit knowledge refers to 'know how' which are the often non-codified components of a given activity (Davidsson and Honig, 2002). Explicit knowledge refers to 'know what' and is knowledge conveyed in procedures, processes and in institutions such as educational establishments.

According to the Mincerian specification of the determinants of individual earnings, the main factors affecting earnings are schooling and experience. Though tests of human capital theory have been mostly performed on the subset of employees, there is no reason to believe that the same relationship would not hold for the entrepreneurial sector of the labor market.

As Davidsson and Honig (2002) indeed assert, solving complex problems and making entrepreneurial decisions utilizes amongst others, an interaction of both tacit and explicit knowledge. Individuals may increase their knowledge through formal education such as university education while informal education is gained through work or 'life' experience.

This theoretical prediction following from human capital theory that there is a positive relationship between human capital and entrepreneurial success was demonstrated to hold empirically by a meta-analysis of 300 studies in developed and developing countries (Van der

Sluis, et al. 2003a): Many studies have indicated that specific manifestations of human capital such as business owner's previous business-related experience, previous management experience and business owner's age affect business performance.

To date, little research has been conducted on the influence of human capital on business performance and motivation in transition countries. Mathijs and Vranken (2001) and Johnson and Loveman (1995) are exceptions and find a positive relationship.

2.2 Illegal experience as a determinant of entrepreneurial performance

Only a few studies have investigated the effect of illegal business activities as a determinant for legal self-employment: The studies conducted by Earle and Sakova in six transition countries (2000, 2001) and one in the developed western economy context (Fairlie, 2002).

The studies by Earle and Sakova show that owning a side-business in the pre-transition year of 1988 clearly increases the probability of private business ownership in the subsequent transition context in six transition countries, i.e. Bulgaria, Czech Republic, Hungary, Poland, Russia and Slovakia (2000; 2001). Owning a side business in 1988 is used as an indicator of some potentially relevant experience in the 'grey market'[5].

Fairlie (2002) investigated the influence of engaging in illegal drug dealing activities as a youth on the choice for legitimate self-employment in later years. In essence, past drug dealing is used as a proxy for individual characteristics that Fairlie associates with entrepreneurship, i.e. risk-taking, entrepreneurial ability and preferences for autonomy. The results show that drug dealing experience has a large, positive and statistically significant effect on the probability of self-employment. These findings therefore provide further evidence that self-employed individuals are not simply those individuals who possess high levels of human and financial

[5] In some of the countries studied, such as Hungary and Poland, certain forms of small private businesses were permitted even during communism. In other countries such as Russia, the restrictions on private businesses were only relaxed after 1987. This means that a side business prior to 1989 is not necessarily an illegal business. In our study, we more accurately measure illegal entrepreneurship experience since we ask our respondents about their business activities prior to any reform measures were implemented.

capital but possess other equally important unobservable characteristics. A limitation to this study is that there may be an unmeasured bias related to the criminal record acquired as a result of drug dealing that may serve as a barrier for these individuals to enter the formal labor market.

Although these studies do investigate the relationship between illegal business experience and entrepreneurship, there are two differences between those and our studies that hinder a comparison. First of all, both studies consider IEE as a potential determinant of entry into entrepreneurship, while we consider its effect on business performance and motivation. Second, the study by Fairlie does not consider legal entrepreneurship activities in an environment in which the very act of private entrepreneurship is illegal regardless of business activity as was the case in Lithuania. They rather consider a situation where entrepreneurship is legally permitted but not for activities related to illegal goods. These are distinctly different situations, where the extent of difference is determined by the extent to which illegal entrepreneurship is considered immoral (Fadahunsi and Rosa, 2002).[6] Especially in the case that legality is not based on the morals of the community but something imposed from the outside by foreign authorities, illegal entrepreneurship might not be considered immoral. This insight contains interesting implications for illegal entrepreneurship in Soviet Lithuania.

In Lithuania, laws prohibiting private business activity were Soviet laws imposed by what many Lithuanians felt was a foreign occupying force. Prior to the annexation of Lithuania into the Soviet Union, Lithuania subscribed to a market oriented economy and private businesses were legal and widely practiced. In addition, illegal entrepreneurship activities may have become socially acceptable since they provided some benefits to the general population by offering goods and services that were unavailable through the inadequacies of central planning. Therefore though we are studying illegal entrepreneurial activity in Soviet Lithuania, this does not necessarily

[6] In Fadahunsi and Rosa's study of Nigerian illegal traders, most traders did not view illegal trading as immoral. Colonialism is given as the main influencing factor for this situation. According to the authors: 'many countries where illegal trading is prevalent were former colonies, which inherited the legal system and legislation imposed by the former colonial power' (2002: 402).

imply that these activities or those individuals involved in these activities were necessarily considered immoral at that time.[7] It is logical that the morality of the activities through which IEE is gathered has a positive effect on the contribution of IEE in a market-oriented economy.

Our first hypothesis follows from human capital theory and our exposition on the specific features of IEE as a manifestation of human capital in the Lithuanian case:

H 1: IEE will be positively related to business performance in a market-oriented economy.

We distinguish two characteristics of IEE that are potential determinants of its usefulness in the later setting of a market-economy. The first characteristic is the similarity between the activity through which IEE has been gathered and the later business activities. Similarity between prior experience and new venture may mean that the entrepreneur can build on prior relationships with relevant stakeholders and thus minimize the 'liability of newness' (Aldrich and Auster, 1986) and benefit from this experience (Gimeno et al., 1997).

The second characteristic pertains to the entrepreneur himself at the time when (s)he gathered IEE, rather than to the character of the activity. It is argued that entrepreneurs who gather such experience when they are relatively young and/or highly educated are more able to adapt the skills and knowledge to the later situation than others. Therefore this sub-sample of entrepreneurs with IEE might generate higher returns from their IEE than others. A hypothesis follows from each of these characteristics:

H 1a: Entrepreneurs for whom the probability is high that they gathered their IEE in activities that are similar to their subsequent legally operated business activities will benefit more from their IEE in terms of performance.

[7] Earle and Sakova raise a related question regarding the classification of entrepreneurship in the 'gray markets' in transition countries: Can they be considered forms of productive or unproductive entrepreneurship? According to Earle and Sakova, it seems to depend on the perspective taken. These activities could be considered productive since they improved on allocation achieved by central planning or it could be considered unproductive because it involved a considerable amount of rent-seeking (see also Baumol, 1990).

H 1b: Entrepreneurs who gathered IEE while young and/or who are highly educated are better positioned to convert and apply their skills and knowledge to the market business situation. These entrepreneurs will therefore perform better.

2.3 Illegal experience as a determinant of entrepreneurial business motivation.

People who engaged in illegal entrepreneurship, which must have been costly in terms of effort and risk, must have been the people who gained the highest utility from doing so. Therefore, illegal experience can be seen as a signal for motivation. In essence, as in Fairlie (2002) we consider the very choice for IEE (drug dealing in Fairlie's case) as a proxy for individual characteristics associated with entrepreneurship, i.e. risk-taking, preferences for autonomy and entrepreneurial ability. The first two are rather linked to motivation than to performance. Moreover, since the costs in terms of effort and risk were substantial, these activities must have been conceived as investments with quite a long pay back period: this is an additional motivation for the following hypothesis:

H 2: IEE leads to continued high levels of motivation to continue and grow legal business operations.

Again, the circumstances, i.e. characteristics of activities and the entrepreneur himself, under which IEE was gathered, might be influential on the size of its effect on business motivation. No theories exist to guide a formulation of hypotheses. Instead, we postulate the following question:

Q 2: Are there any circumstances under which IEE was gathered that lead to a distinct effect of IEE on business motivation?

3. DATA GATHERING, SAMPLE CHARACTERISTICS AND HYPOTHESES TESTING

3.1 Data gathering

Our analysis is based on the Survey2000 data collected by one of the authors in Lithuania. From September - December 2000, Lithuanian language questionnaires were sent out to private business owners throughout Lithuania. Due to the inability to obtain accurate lists of operating private businesses in Lithuania[8], the survey was not based on a random sample and most addresses were obtained through the membership lists of various entrepreneurship organizations[9] in Lithuania. This may have resulted in a bias for businesses that are older and have higher turnovers than the average private business in Lithuania. The response rate was high at fifty percent. A total of 1011 questionnaires were sent out and 505 completed questionnaires were returned. Of the 505 respondents, 399 were business owners, our empirical equivalent of entrepreneurship[10].

3.2 Testing the hypotheses

We test the formulated hypotheses (and question) by using regression analyses to test the influence of a number of human capital variables on business performance and motivation. In our analysis used for testing the first set of hypotheses, we use three objective measures for business performance as the dependent variables: firm size in terms of full time employment (FTE), business turnover and business financial success. All three variables are used widely (see Van der Sluis et al, 2003a).

[8] As in many other transition countries, an accurate list of legal enterprises in Lithuania does not exist. Previous surveys attempted using the official list of registered businesses from the Lithuanian Department of Statistics indicated that the official register was rife with non-existent businesses or inaccurate addresses. See Aidis 2003 for further discussion.

[9] The address lists of members from the five branches of the 'private' Lithuanian Chambers of Commerce (Vilnius, Kaunas, Panevezys, Siauliai, and Klaipeda), the Lithuanian Business Employer's Confederation (LVDK) and the Kaunas Regional Association of SMEs were used. The Lithuanian Chamber of Commerce and the LVDK are two of the largest entrepreneurship organizations in Lithuania.

[10] A business owner met the following criteria: they had their own business, it was still in operation and their main business activities were not in the agriculture sector. Earle and Sakova (2000) further classify two different types of business owners: own-account workers i.e. business owners with no employees and employers i.e. business owners with hired employees. They postulate that own-account workers in transition countries may actually be a form of hidden unemployment. However their regression results do not support this claim, neither do other studies (EBRD 2000). We control for this possible distinction in our regression analysis.

For testing the second hypothesis (and research question), we use two subjective measures for business motivation as the dependent variables: intention to continue the business and intention to grow the business. Though business motivation might be viewed as a completely subjective assessment, a number of authors have indicated that business growth is at least partially determined by the entrepreneur's motivations and intentions for the business (Bird, 1988; Davidsson, 1991; Kolvereid, 1992; Cooper, 1993; Herron and Robinson, 1993; Cliff, 1998).

The centerpiece of our analysis, required for testing *H 1* and *H 2*, is a dummy variable for IEE that takes on the value one if a Lithuanian entrepreneur has gathered IEE during Soviet rule in Lithuania prior to starting up a private business, and is equal to zero otherwise. Unfortunately, we do not know the number of years of IEE gathered[11]. A positive coefficient pertaining to this variable in the business performance equations would support *H 1*. Likewise, a positive coefficient for IEE in the business motivation equations would support *H 2*.

In order to test *H 1a* and *H 1b* and to answer *Q 2*, all pertaining to the interrelated effect of IEE with the personal business owner and business characteristics, several interactive variables are created.

To test *H 1a*, we need to pinpoint characteristics that affect the probability that similar activities will be continued after the regime switch. This is more likely to be the case for female entrepreneurs who usually (continuously) engaged in smaller scale textile businesses[12] as well as for the trade sector. Thus we form two interactive dummies, i.e. IEE*female and IEE*trade. *H 1a* will be supported if the coefficient of these interaction terms will turn out to be significantly positive.

To test *H 1b*, interactive variables are created that distinguish the group of entrepreneurs with a higher education and IEE (IEE*eduhigh) and age with IEE (IEE*age). *H 1b* will be supported if the coefficients of these interaction terms will be significantly positive and negative respectively.

[11] Other studies on gray market experience have had similar drawbacks, see Earle and Sakova 2000, 2001.
[12] Based on interviews conducted with female entrepreneurs by Aidis in 1997 – 1998. Also, in many cases, small scale home production turned into trading activities in Russia (Bridger et al., 1996).

Finally, to answer *Q 2*, the interactive variables, which are created to test hypotheses *1a* and *1b*, are included into the regressions that explain business motivation (continuation and growth).

3.3 Other explanatory variables

A number of conventional human capital variables are used as additional explanatory variables. These include both tacit and explicit forms of human capital. General and more specific work experience variables are included such as previous employment, work-related management experience, business-related work experience and self-employment experience. We also include a measure of tacit human capital, i.e. a dummy that indicates whether the entrepreneur perceives entrepreneurship as a family trait. Educational background and general 'life' experience as measured by the business owner's age are also viewed as forms of general human capital.

The control variables used are business owner's sex, whether the business was newly started and business owner's 'optimism' with regards to the future. Starting a new business is a variable that has specific connotations for the transitional environment. Since businesses started using existing physical capital from privatized state-owned enterprises, are still largely embedded in their existing networks, they may have inherited an advantage to businesses that have been newly started. They tend also to be larger than completely new businesses.

The variable measuring 'optimism' was included in order to control for the business owner's subjective 'state of mind' which may influence their subjective assessment of business motivation. It is well known that entrepreneurs tend to be excessively optimistic (Cooper et al., 1988; De Meza and Southey, 1996; Manove and Padilla, 1999). Optimism might even be positively correlated with objective measures of performance, although the empirical evidence so far does not support this conjecture (Cooper et al., 1988). However, it should be noted that we use a different measure of optimism than did Cooper et al. We measure "optimism" as the belief that economic circumstances will improve in Lithuania over the next five years. Cooper and his co-authors measured optimism as the belief in one's own positive business proceedings (in

comparison to their general beliefs about business proceedings in comparable circumstances). Appendix 1 provides an overview of the definitions of all explanatory variables that are used in the analyses.

3.4 Descriptives

Table 1 shows the definitions and distributions of the measures of performance and motivation that we use as dependent variables in our analyses to assess whether illegal experience affects performance and motivation of small business owners in Lithuania. The first three measures are indicators of business performance, whereas the latter two are indicators of business motivation.

-Insert Table 1 about here-

Table 2 shows the distribution of the independent variables used in all of the analyses. Twenty two percent of the sample has illegally gathered experience as an entrepreneur, i.e. before this labor market choice became a legal possibility. Approximately three-fourths of the respondents were male. This percentage is higher than the overall percentage of male business owners and managers in Lithuania estimated to be 66 percent in 1999 (Lithuanian Department of Statistics, 2000). The vast majority of the respondents were highly educated, which is also a characteristic observed in other transition economies (Smallbone and Welter, 2001; Earle and Sakova, 2000) but is significantly higher than was found by a study of business owners conducted by the Lithuanian Department of Statistics (LDS) (Jancauskas, 2000). However, the survey methodology may have influenced these differences in outcome. The LDS results are based on structured personal interviews conducted annually with approximately 1700 private businesses in Lithuania[13]. Our sample is based on a mail survey, which may have resulted in a higher proportion of more highly educated respondents[14].

[13] Unfortunately the raw data from this survey was not available.
[14] Previous studies have indicated that better educated professionals are more likely to return questionnaires (Miller 1991).

-Insert Table 2 about here-

Some of the independent variables used are correlated (see Appendix 2). Most notably, the conventional human capital variable education is positively correlated to both management experience ($p < 0.01$) and job experience ($p < 0.05$). Management experience is also positively correlated ($p < 0.01$) to job experience, business owner age, employment experience and family business trait. Both management experience and job experience are negatively correlated to starting a new business ($p < 0.01$). As would be expected age is correlated to management experience and job experience but is also found to be correlated to the proxy for entrepreneurship as a family trait (all at $p < 0.01$). IEE shows a positive correlation with self-employment experience ($p < 0.01$). This is to be expected since entrepreneurs with illegal experience have started a business prior to 1986. It is therefore all the more relevant to control for self-employment experience and age in our regression equations.[15]

Appendix 3 shows in what ways and to what extent owners of IEE differ from the remainder of the entrepreneurs. They are remarkably similar in terms of most of their personal characteristics: they are not lower or higher educated, they were not more inclined to agree that 'making money' (i.e. private business) was a family trait than the sample as a whole. The only (significant) differences are that owners with IEE are older on average and have more business owner experience. Interestingly, male owners with illegal experience are indeed older (45) than male owners without illegal experience (42), whereas female owners with IEE turn out to be younger (40) on average than female owners without IEE (42). Moreover Appendix 4 shows that IEE is present in all of the age groups that we distinguished: it is certainly not only prevalent amongst the eldest part of our sample. Nevertheless, in order to obtain an unbiased estimate of the

[15] None of the correlations is sufficiently high to raise concern about multicollinearity problems affecting the estimation results.

effect of IEE, we should take into account that younger entrepreneurs, i.e. those who were younger than 18 in 1986 were highly unlikely to have gathered IEE. We cope with this potential bias by rerunning all the analyses on the subset of entrepreneurs that were 18 or older in 1986. The results (available on request from the authors) differed only slightly with the results pertaining to the total sample and these differences are mentioned when applicable.

4. METHODOLOGY

Given the different types of dependent variables used to measure business performance as described in Table 1, we use various regression estimation models including ordinary least squares (OLS), ordered probit and logit models. Our analysis is based on a three-step approach. In step one, we test the influence of a set of generally used explanatory variables based on conventional forms of human capital (measuring the influence of work experience, education, age and the like) and control variables on business performance and motivation.

In step two we include IEE in the regression estimations to assess to what extent this variable adds explanatory power to the usual model and to what extent and in what direction it affects performance and motivation of small business owners. Step 2 enables testing *H 1* and *H 2*.

Finally, in step three, we test whether the effect of IEE is particularly strong (or weak) for subsets of entrepreneurs with specific characteristics by the inclusion of the interactive terms as discussed. This step enables testing *H 1a*, *H 1b* and answering *Q 2*.

5. REGRESSION RESULTS

Estimation results are presented in Table 3 and Table 4. Both tables show the determinants of business performance and motivation. Table 3 shows the results from step 2, whereas Table 4 shows the results from step 3. The results for step 1 have been omitted from the tables since the significant outcomes are very similar to the results for step two[16].

[16] Step one results can be obtained from the authors.

-Insert Table 3 about here-

IEE

The step two results consistently show that IEE does not have a significant influence on business performance: its coefficient is insignificant in all of the three business performance equations. This leads us to reject H 1: IEE has no positive effect on business performance.

The estimation results pertaining to business motivation in the last two columns of Table 3 show a somewhat more ambiguous picture: IEE is positively and significantly associated with the business motivation of entrepreneurs as measured by their intention to continue. However, IEE is not significant, though positive, for the intention to grow in business. Thus, this result does not provide a clear-cut test result of hypothesis 2. Before we analyze these results deeper by means of the step 3 analyses, we first discuss the results for the human capital and other control variables in Table 3.[17]

Effects of other forms of human capital

The tables show that education is significantly and positively related to business turnover and intention to grow. This is consistent with most of the findings in the literature (see Van der Sluis et al., 2003a) that indicate a positive relationship between education and the business performance of entrepreneurs, however performance is measured. In particular, the result is consistent with the findings by Johnson and Loveman (1995) and Mathijs and Vranken (2001) that pertain to transition countries. Johnson and Loveman (1995) found that Polish entrepreneurs with a university degree perform better. They conclude that this supports the hypothesis that entrepreneurs who have a higher level of general human capital, as measured by a university education, have some advantages when it comes to solving the complex and ever-changing problems of business administration in an environment as unstable as that in Poland. Mathijs and

[17] The results of the control variables are very similar across step 2 and step 3. We only discuss the step 2 results of these variables.

Vranken (2001) establish that more educated entrepreneurs (in farming enterprises) run more efficient farms in Bulgaria and Hungary. Efficiency, in the form of technical efficiency, is measured by the farm output relative to its inputs (capital, land, labor, etc.).

However, it should be noted that our study as well as the entire collection of studies mentioned or included in the meta-analysis by Van der Sluis et al., have merely measured the (conditional) correlation between education and performance rather than the *causal* effect. The latter is the estimate of interest. Therefore all results obtained so far, mostly by means of ordinary least squares analyses, are potentially biased.

There are at least two possible sources of bias when OLS is used to estimate this relationship. First, the schooling decision is probably endogenous in a performance equation because individuals are likely to base their schooling investment decision, at least in part, on their perceptions of the expected payoffs to their investment. Second, there may be unobserved individual characteristics, such as ability and motivation, that affect both the schooling level attained and subsequent business performance. The omission of these unobserved characteristics from a performance equation would also serve to bias OLS estimates, where the direction and magnitude of the bias depends on the correlation between these characteristics and the schooling level attained. Several methods to cope with these problems have been applied recently to estimate the returns to education for employees. The general conclusion is that OLS-estimates of the returns to education for employees are biased downwards (Ashenfelter et al., 1999) but that the application of OLS does not affect the other estimates in the same regression equation. Two very recent applications of such more recently developed methods to the estimation of the effect of education on entrepreneur performance indicate that the bias is even larger for entrepreneurs than for employees and that OLS-estimates are severely biased downwards in these applications (Parker and Van Praag, 2004; Van der Sluis, Van Praag and Van Witteloostuijn, 2004).

Experience-related forms of human capital such as previous management experience and job experience are not found to be significant in our regression models. Other forms of human capital

such as self-employment experience and previous employment experience were not significant in any of our estimation models and were therefore dropped from our final regression results. The result that conventional forms of general or more specific forms of work experience are not associated with business performance (nor with motivation) is inconsistent with the majority of previous studies that found a positive effect (see Van der Sluis et al., 2003a,b). However, the lack of significance of these conventional human capital variables seems to be highly influenced by the transitional environment, since the same lack of significance has been found in previous studies pertaining to transition countries (Johnson and Loveman, 1995; Mathijs and Vranken, 2001). The fact that most business owners obtained their work experience under drastically different economic situations should be the explanation for this experience to be of little influence on their further private business performance.

Our finding that a business owner's age is significantly and positively related to firm size (but not to the other performance measures) is consistent with previous evidence from transition countries (Johnson and Loveman, 1995; Mathijs and Vranken, 2001). The more general evidence, however, as has been documented by Van der Sluis et al., mostly shows an inversely u-shaped relationship between age and business performance, where the top of the curve is at approx. 34 years old (see also Parker and Van Praag, 2004).

Contrary to our expectations, the variable that measures whether entrepreneurial endeavor is perceived to be a family trait (etrait) has no significant impact on either business performance or business motivation. We would have expected that this dummy had a positive effect on both, since it indicates whether the entrepreneur has inherited an entrepreneurial nature, and/or has been raised in an entrepreneurial environment. The finding is however similar to the findings of previous empirical studies that analyzed the effect of "father entrepreneur" on entrepreneurship (see Van der Sluis et al.). These studies indicated that a father who was an entrepreneur has no significant effect on the performance of the entrepreneurial offspring, although it does have a positive effect on the offspring's decision to *become* an entrepreneur.

Other control variables

As we have already noted, starting a *new* business has presumably a specific connotation for the transitional environment. Since businesses started using existing physical capital from privatized state-owned enterprises, are still largely embedded in their existing networks, they may have inherited an advantage to businesses that have been newly started. In general, they tend also to be larger than completely new businesses.

Indeed, as the regression results in the first column of the table indicate, businesses newly started are smaller than other businesses. However, they are more successful financially. This finding cannot easily be compared to either the general literature on business performance or the specific literature pertaining to countries in transition due to a lack of previous evidence.

The likelihood that female business owners would have smaller businesses, lower turnover and less business financial success was significant in almost all our estimation models[18]. These results are consistent with studies done in transition countries (Aidis 2003) as well as advanced western countries (Kalleberg and Leicht, 1991; Fischer, 1992; Fischer et al. 1993, Parker and Van Praag 2004, Van der Sluis et al., 2004). Cliff (1998) indicates that the tendency for women to have smaller businesses may have less to do with overall business success than with differences in business size thresholds. Cliff's indication though is not consistent with our finding that intentions for business growth do not differ significantly between male and female business owners.

The control variable 'optimism' is significantly associated with business turnover, financial business success, intention to continue and intention to grow in business. We included this variable to cope with the tendency that more optimistic people are inclined to give higher subjective assessments of motivation, i.e., intention to continue and/or grow their businesses. Moreover, optimism turns out to be a productive trait, since its coefficient is significantly positive

[18] These results are similar to those obtained for female SME owners in Lithuania. See Aidis 2002.

in most of the performance equations. As we postulated when motivating the inclusion of this variable into the equations, the latter effect is highly notable and has not found previous empirical support (Cooper et al., 1988). We also want to stress that this effect is not implied by our definition of "optimism": it is defined as one's perspective on general economic conditions (rather than on own economic proceedings, possibly compared to others').[19]

Differentiating IEE

In step three, the effect of IEE is tested for specific groups of entrepreneurs. To test *H 1a*, we evaluate the effect on business performance of characteristics that affect the probability that similar activities will be continued after the regime switch in combination with IEE. As we argued, this is more likely for female entrepreneurs as well as for the trade sector. Thus, testing *H 1a* comes down to evaluating the effects of two interactive dummies, i.e. IEE*female and IEE*trade, on the various measures of business performance. Significantly positive coefficients would render support for the hypothesis.

The results show some support for *H 1a*: Entrepreneurs with IEE in the trade sector appear to have a significantly larger turnover than entrepreneurs who do not have this type of IEE. However, IEE in the trade sector does not affect the size of their business nor its profitability. The expected similarity of the pre-transition activities with the current activities of female entrepreneurs with IEE does not affect performance, however measured. We thus find only weak support for *H 1a*: the liability of newness is in general not affected negatively by our measures of similarity of previous activities.

To test *H 1b*, i.e. that entrepreneurs who are better educated and/or younger are more able to convert their IEE to a market situation, we inspect the estimated coefficients of the interactive variables created to distinguish these group of entrepreneurs: (1) those with a higher education

[19] In our regression models, we also controlled for business owners with or without employees, also referred to as own-account workers and employers (Earle and Sakova, 2000). The effects were insignificant.

and IEE (IEE*eduhigh) and (2) age with IEE (IEE*age). *H 1b* is supported if the coefficients of these interaction terms will be significantly positive and negative respectively.

Table 4 shows quite convincing support for this hypothesis in terms of one of the business performance measures, i.e. turnover. Turnover is significantly higher for these groups of entrepreneurs who are expected to have been more able to convert and apply their knowledge and skills that resulted from their IEE. The other performance measures are not significantly higher for these groups of entrepreneurs.

Finally, to answer *Q 2*, we investigate the effects of all interactive variables that were introduced to test *H 1a* and *H 1b* on our two measures of business motivation, i.e. continuation and growth. The last two columns of Table 4 show that there is only one significant effect on business motivation: female entrepreneurs with IEE, i.e. a group of entrepreneurs who are likely to have experience of a type that is similar to their current activities, are indeed more likely to continue their business. The likelihood of business growth for this group is however not different from other entrepreneurs. Trade-related activities do not show an effect on business motivation at all. Moreover, the group of entrepreneurs who are most likely to be able to convert their IEE to the benefit of market oriented activities (higher educated and/or younger entrepreneurs) are not more motivated than others to continue and grow their businesses. We thus find little differentiation amongst groups of entrepreneurs with IEE in terms of their motivation.

6. DISCUSSION AND CONCLUSION

Our overall results indicate that illegal entrepreneurship experience is not associated with business performance. The result renders no support for the first hypothesis that IEE would increase business performance in general. These results tend to undermine the notion that prior experience in the black or gray market under one economic system may provide valuable human capital for entrepreneurs in a more open-market oriented setting: this has implications for the

evaluation of the role of the 'unofficial economy' in economic development (Johnson, et al. 1997).

However, a closer look at our results that relate to performance indicates that some specific groups of the population of Lithuanian entrepreneurs with IEE have been able to benefit from their IEE within a market setting. First, we find weak support for hypothesis *1a*: entrepreneurs for whom the likelihood is higher that their IEE is gathered in similar activities will benefit more from this IEE in terms of their performance in a market situation, due to less liability of newness: We find that IEE in trade activities has a positive effect on business turnover in the year 2000.

Second, we find some support for hypothesis *1b*: Younger entrepreneurs with IEE and/or entrepreneurs with a university education and IEE experience significantly higher business turnovers today. These entrepreneurs hence, were able to convert their illegally acquired experience to enhance business performance in a market-oriented economy.

We do find evidence for illegal experience to be positively associated with motivation to continue one's business in general. This result supports hypothesis 2, i.e. that illegal experience can be seen as a signal for motivation. Moreover, these activities must have been conceived as investments with quite a long pay back period. We do not find support for hypothesis 2 in terms of motivation to grow.

The answer to *Q 2*, i.e. whether the IEE of specific groups of entrepreneurs is more influential on business motivation than the IEE of other groups, is not affirmative. The only finding is that the general positive effect of IEE on the motivation to continue one's business can be fully attributed to the group of females with IEE: they experience significant higher levels of motivation to continue their business.

Before we draw conclusions based on these findings, we should like to stress some limitations pertaining to our empirical research approach. Since our analysis was based on a non-random survey, it is possible that we were not able to capture a representative sample of business owners with IEE. It is possible that business owners with IEE avoided membership to

entrepreneurship organizations and as such were inadequately represented in our sample. In the same vein struggling businesses as well as highly successful businesses may also be less interested in membership to entrepreneurship organizations and as a result be under represented in our sample.

We do not know to what extent the variables that we use as performance measures are valid. Overall, our measures of size and profitability turn out to be hard to explain as is shown by the low number of significant effects and the low R-squared. Perhaps these measures of performance are not particularly useful in a transition setting? Or, we have not succeeded in finding the most influential explanatory variables for such a setting? We do not know the answers to these questions that should therefore be addressed in further research. Given the absence of many significant effects, the finding that IEE does play a role is even more notable.

Under two circumstances, it would be necessary to treat the accumulation of IEE as an investment decision, in the same vein as we described the investment decision in education, to obtain an unbiased estimate of its effect. First, our results are potentially biased if the decision to invest in IEE is partly determined by the future performance the entrepreneur expects to generate from this investment in the market setting. However, endogeneity in this sense is unlikely since the transition was difficult, if not impossible, to foresee. A second source of bias would be the presence of unobserved factors that affect both the decision to pursue IEE and future performance and motivation. The latter source of bias is more likely to prevail and would justify an estimation approach different from OLS and the other non-linear variants on that theme we applied. This would be too complex given the current dataset that does not provide the necessary identifying instruments. Moreover, such an approach has not yet found broad acceptance in the entrepreneurship literature.

Our findings have implications for government run entrepreneurship programs. It may be efficiency enhancing for governmental programs to promote business formation and growth amongst individuals who have had illegal entrepreneurship experience. In general, this focus may

not have an influence on the resulting business's performance but may provide an important motivational factor to the business owner's ability to endure business hardships. This may be especially true for potential female entrepreneurs. This type of screening may be useful not only for transition countries but for market-based economies in general.

For the recruiting of promising entrepreneurs, in terms of their business performance, who are to be stimulated to exploit their business potential to the fullest, government (or private) programs should be particularly keen at finding particular groups of entrepreneurs with IEE: those who are younger, more highly educated and/or active in the trade sector. They form an interesting target group for supportive policy measures.

Further research is necessary. Studies that are able to specifically uncover detailed information such as the type, length, size and sector of illegal entrepreneurial activity may provide increased insights into the dynamic relationship between IEE and legal business performance. Qualitative studies investigating the motivations, rewards and general characteristics of entrepreneurs that engaged in IEE could provide new perspectives as to how illegal entrepreneurship experience can best be measured.

Appendix 1: Variables defined

Variable	Characteristic	N	Mean	SD
Education	Three categories possible: One if the respondent has a university education, two if the respondent has a technical/professional education and three if the respondent has a high school education.	396	2.66	0.59
Mngt. exp.	One if the respondent has work-related experience, zero otherwise.	395	0.53	
Job exp.	One if the respondent had started their business in a sector where they had previous work-related experience, zero otherwise.	392	0.48	
Empl. Exp.	One if the respondent has previous employment experience, zero otherwise.	395	0.91	
Self empl.	Continuous variable: number of years that a respondent has previously owned a private business prior to their current business.	359	9.29	4.84
New	One if the respondent started a new business (with no inherited physical capital), zero otherwise.	395	0.78	
Etrait	One if the respondent agrees that 'making money' is a family trait, zero otherwise. Proxy for entrepreneurial family.	385	0.64	
Age	Continuous variable measuring business owner age.	393	43	8.74
Age2	Age variable squared divided by ten.	393	190.93	78.78
Female	One if female, zero otherwise.	399	0.25	
Optimism	One if the respondent agrees that the general economic situation in Lithuania will improve in the next five years, zero otherwise.	392	0.62	
Illegal (IEE)	One if the respondent was involved in private money earning activities prior to 1986, zero otherwise.	388	0.22	
IEE*fem	One if the respondent was involved in private money earning activities prior to 1986 and is female, zero otherwise.	392	0.04	
IEE*uni	One if the respondent was involved in private money earning activities prior to 1986 and is university educated, zero otherwise.	389	0.15	
IEE*trade	One if the respondent was involved in private money earning activities prior to 1986 and if their main business activity is either retail or wholesale trade, zero otherwise.	393	0.09	
IEE*age	Age of the respondent who was involved in private money earning activities prior to 1986, zero otherwise.	398	10.93	19.44

N = total number of observations; SD = standard deviation.

Appendix 2: Correlation matrix

1. education	1	2	3	4	5	6	7	8	9	10	11	12
2. mngt exp	**0.21**											
3. job exp	*0.13*	**0.33**										
4. new	-0.07	**-0.17**	**-0.13**									
5. etrait	0.00	**0.15**	0.08	**-0.15**								
6. age	0.09	**0.18**	**0.17**	-0.07	**0.14**							
8. self exp	-0.09	-0.07	-0.02	*0.12*	0.09	*0.13*	*0.12*					
9. empl exp	0.03	**0.21**	**0.17**	0.00	*0.10*	**0.26**	**0.22**	0.08				
10. IEE	-0.06	0.01	-0.08	0.08	0.02	0.10	0.08	**0.36**	0.03			
11. trade	*-0.10*	-0.06	*-0.13*	0.04	0.05	*-0.11*	*-0.11*	-0.05	-0.07	-0.01		
12. optimism	*0.10*	0.04	0.09	0.03	-0.02	0.01	0.01	-0.00	0.07	0.07	0.00	
13. sex	0.00	*-0.12*	-0.02	0.02	0.06	-0.05	-0.05	*-0.13*	-0.02	-0.05	-0.02	*-0.12*

Probability values: bold = p value significant at the 1% test level, italics = 5% test level.

Appendix 3: T test significance levels for illegal entrepreneurship experience

Characteristic	N	Mean	Std	Mdiff	SE	Df	T test
Education	86	2.58	0.62	0.32	0.08	132.5	1.22
Empl. Exp	86	0.92	0.28	-0.01	0.03	149.82	-0.58
Etrait	82	0.66	0.48	-0.02	0.06	131.05	-0.32
Optimism	85	0.67	0.47	-0.08	0.06	140.70	-1.32
New	87	0.84	0.40	-0.08	0.05	161	-1.77
Age	86	44.41	7.84	-1.98	0.99	155.51	-1.99**
Self empl. exp.	83	12.31	6.97	-3.99	0.79	93.73	-5.05***
Job exp.	85	0.41	0.50	0.09	0.06	137	1.47
Mngt. Exp.	86	0.53	0.50	-0.01	0.06	138	-0.24
Trade	87	0.39	0.49	-0.01	0.05	139.96	-0.18

N = Total number of observations; Std = standard deviation; Mdiff = Mean difference; SE = Standard error
Probability values: *** = p value significant at the 1% test level, ** = 5% test level, * = 10% test level.

Appendix 4: The distribution of illegal entrepreneurship experience over age groups

age	IEE	No IEE	Total observations
< 35	6	55	61
36 – 45	48	139	187
46-55	24	69	93
> 56	8	31	39

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Table 1:

Definitions and distributions of dependent variables: performance and motivation

Measure	Definition	N	Mean	SD
Firm Size	Continuous variable measuring number of employees (from 0 to 320 employees).	399	28	43
Business Turnover	Ordinal variable indicating annual business turnover for 1999. Five categories were possible: (1) up to 100 000 Lt; (2) 100 001 – 500 000 Lt; (3) 500 001 – 1 000 000 Lt; (4) 1 000 001 – 5 000 000 Lt; (5) more than 5 000 000 Lt.	390	3.02	1.39
Business Financial Success	One if the respondent states that their business is their main source of income multiplied by sufficient income in categories. 0 = completely insufficient, 1 = not sufficient, 2 = sufficient, 3 = more than sufficient	396	1.49	0.82
Intention to continue	One if the respondent would not quit their business if offered a well-paid job, zero otherwise.	381	0.68	0.47
Intention to grow	One if a respondent intends to increase business turnover in the next five years, zero otherwise.	393	0.26	0.44

N = total number of responses; SD = standard deviation.

Table 2: Personal and business characteristics of business owner respondents

Characteristic	N	Mean	SD of continuous variables
Sex (female = 1)	399	0.25	
University education	398	0.72	
IEE. (before 1986)	388	0.22	
Prior private business experience	394	0.48	
Previous job-related manag. exp.	395	0.53	
Business sector – manufacturing	399	0.25	
Business sector - trade	399	0.40	
Business location - urban	397	0.95	
Employer	399	0.89	
Age of owner in years	393	43	8.74
Number of employees	399	28	43
Years in business	393	7	5
Etrait	385	0.64	
New	395	0.78	
Optimism	392	0.62	
Job experience	392	0.48	
Business – main income	398	0.87	

N = total number of responses; SD = standard deviation.

Table 3: Step 2 Regression results: the effect of IEE on performance and motivation

	Business Performance			Business Motivation	
	Firm size OLS	Turnover Ordered probit	Financial success Ordered probit	Intention to continue Logit	Intention to grow Logit
Illegal	**1.04**	**-0.11**	**-0.05**	**0.63****	**0.38**
	5.76	***0.14***	***0.16-***	***0.32***	***0.31***
Constant	-24.34	-	-	-1.58	0.67
	28.60	-	-	*2.09*	*2.32*
Education	5.41	0.39**	0.05	0.12	0.84***
	5.25	*0.12*	*0.14*	*0.27*	*0.26*
Mngt. Exp	0.82	0.19	0.04	-0.18	0.67
	4.91	*0.13*	*0.13*	*0.27*	*0.28*
Job exp.	7.28	-0.14	0.05	0.19	0.25
	5.05	*0.13*	*0.13*	*0.28*	*0.28*
Age	2.59**	0.00	0.05	0.05	-0.08
	1.30	*0.04*	*0.05*	*0.09*	*0.10*
Age2	-0.25	-0.00	-0.01	-0.01	0.01
	0.15	*0.00*	*0.01*	*0.01*	*0.01*
Etrait	-2.00	-0.07	0.09	0.17	0.32
	5.22	*0.12*	*0.13*	*0.26*	*0.26*
New	-22.76***	-0.11	0.31**	0.24	0.17
	6.85	*0.14*	*0.15*	*0.28*	*0.30*
Sex	-11.95***	-0.79***	-0.27	-0.16	0.07
	4.46	*0.15*	*0.14*	*0.28*	*0.30*
Optimism	5.43	0.35***	0.42***	0.79***	1.60***
	4.63	*0.11*	*0.12*	*0.24*	*0.25*
(pseudo) R squared	0.10	0.06	0.03	0.05	0.14
N	360	349	357	348	359

Robust standard errors in italics; Probability values: *** = p value significant at the 1% test level, ** = 5% test level
N = total number of observations

Table 4: Step 3 Regression results:

Differentiating the effect of IEE on business performance and motivation

	Business Performance			Business Motivation	
	Firm size OLS	Turnover Ordered probit	Financial success Ordered probit	Intention to continue Logit	Intention to grow Logit
IEE*fem	**-3.82**	**0.17**	**0.26**	**2.09****	**0.97**
	10.34	***0.33***	***0.37***	***1.04***	***0.91***
IEE*trade	**3.27**	**0.54****	**0.08**	**0.79**	**-0.38**
	10.02	***0.24***	***0.28***	***0.58***	***0.55***
IEE*uni	**20.27**	**0.67****	**-0.45**	**-0.19**	**0.56**
	10.94	***0.27***	***0.32***	***0.68***	***0.59***
IEE*age	**-0.34**	**-0.02*****	**0.00**	**0.00**	**0.00**
	0.18	***0.00***	***0.00***	***0.01***	***0.01***
Constant	-19.58	-	-	-1.47	0.93
	29.58	-	-	*2.08*	*2.32*
Education	0.23	0.21	0.16	0.15	0.71**
	6.39	*0.14*	*0.16*	*0.30*	*0.29*
Mngt. Exp	0.78	0.19	0.04	-0.24	0.01
	4.94	*0.13*	*0.13*	*0.28*	*0.29*
Job exp.	6.76	-0.16	0.06	0.23	0.28
	5.02	*0.13*	*0.12*	*0.27*	*0.29*
Age	2.47	-0.00	0.06	0.05	-0.08
	1.32	*0.05*	*0.05*	*0.09*	*0.10*
Age2	-0.23	-0.00	-0.01	-0.00	0.01
	0.15	*0.00*	*0.01*	*0.01*	*0.01*
Etrait	-1.55	-0.05	0.09	0.18	0.33
	5.16	*0.12*	*0.13*	*0.26*	*0.26*
New	-22.83***	-0.09	0.33**	0.30	0.18
	6.94	*0.14*	*0.15*	*0.29*	*0.30*
Sex	-12.04**	-0.86***	-0.31**	-0.39	-0.10
	4.87	*0.17*	*0.15*	*0.31*	*0.33*
Optimism	5.20	0.36***	0.43***	0.81***	1.60***
	4.68	*0.11*	*0.12*	*0.24*	*0.26*
R squared/ pseudo R squared	0.108	0.069	0.034	0.062	0.15
N	360	349	357	348	359

Robust standard errors in italics; Probability values: *** = p value significant at the 1% test level, ** = 5% test level, *10% test level. N = total number of observations