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Determinants of Profitability of Polish Rural Micro-Enterprises at the Time of EU Accession*

Abstract

Rural micro-enterprises are an important factor in sustainable rural development in post-transitional Eastern Europe. This paper deals with determining the key factors influencing profitability in rural micro-enterprises in Poland. The research design was based on a questionnaire survey of 300 rural micro-enterprises in the food-processing sector in rich and poor Polish provinces. The analysis carried out in this study is centered around the Polish EU accession in May 2004. Similar to other related studies, our results show that EU accession was not perceived as a major change by rural Polish micro-entrepreneurs and that the EU related factors were not significant determinants of their profitability. However, our results also show that the success of the rural food processing micro-enterprise in Eastern Europe is most related to its owner/manager and enterprise characteristics. For the owner/manager the most significant determinants are his/her age and risk-taking as the main motive for establishing an enterprise. The enterprise characteristics that determine the profitability include enterprise location within a region with competitive situation, enterprise size (being a sole trader or family enterprise), ICT advancements in enterprise and the fact whether the enterprise has any certificates for its products. The results have significant implications for the researchers and

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policy-makers and can become a basis for preparing relevant enterprise support policies in post-transitional Eastern Europe.

Keywords: micro-enterprises, rural development, transition economies, EU Accession, linear regression model.

Introduction

This paper presents an empirically based analysis of factors influencing profitability in rural micro-enterprises. Our focus is quite unique since as opposed to the relatively large literature dealing with micro-enterprises in developing countries we concentrate on rural enterprises in post-transitional Eastern Europe. Our results are based on an original survey of micro-entrepreneurs engaged in food processing both in poor and rich parts of rural Poland. According to our knowledge, this is the first empirical study of the determinants of profitability of rural food processing micro-enterprises in any of the European post-socialist countries. Our research therefore fills the gap in the prevailing micro-enterprises literature dealing predominantly with both the first world and the third world (Schreiner and Woller, 2003).

Our analysis is centered around the period of Polish accession to the EU in May 2004. It reflects attitudes and conditions in a two-year preparatory period before EU accession, when Polish policies, rules, attitudes and expectations underwent a process of alignment with EU conditions. This alignment, especially for attitudes, continued during 2004, the first year of Polish EU membership. Our results show that EU accession was not perceived as a major change by rural Polish micro-entrepreneurs and that EU related factors were not significant determinants of their profitability.

In our survey we asked Polish rural micro-entrepreneurs about the shares of their sales on local, regional, countrywide and international markets, about the support from governmental and EU programs and about their perception of influence of EU accession on the performance of small rural enterprises in Poland. Both descriptive and regression analyses of the results of the survey show that these EU related concerns were not directly important for the success of enterprises. This is in marked contrast to pronounced positive EU accession effects on Polish farmers (Falkowski, Jakubowski, and Strawinski, 2011).

Our results confirm related findings of Kadocsa and Francsovics (2011) who show that Hungarian small enterprises did not perceive any major impacts of EU accession. The Hungarians' small businesses did not capitalize on the opportunities offered by the EU, did not make an effort to apply for EU grants and funds and did not attempt to penetrate new markets.

Our analysis shows that the success of the rural food processing microenterprise in Eastern Europe is most related to its owner-manager. Surprisingly, the characteristic of the owner – manager which matters the most is not his education or experience with food processing but his age. The major policy recommendation for government authorities dealing with support policies is therefore not so much to look at the enterprise characteristics but to concentrate on the characteristics of the entrepreneur. Our analysis also confirms that the profitability of rural food processing microenterprises is positively correlated with favourable micro and macroeconomic conditions differentiating between rich and poor areas.

The Importance of Polish Food-Processing Micro-Enterprises

Micro-enterprises in the Polish food-processing sector are important for the development of the entire Polish economy. Poland is a post-communist country that has undergone various transformational changes, including the breaking up and consequent rebuilding of economic and social institutions, particularly that of entrepreneurship. Although private business in some limited form, especially in agriculture, has always existed in Poland, even during the Communist regime, the structural changes of the 1990s caused unemployment, a decrease in production and economic stagnation in the country. Even though the Polish economy has achieved stable economic growth (on average 3–4% annually), the impact of the system's change is still apparent. Polish rural areas are the most obvious example of this fact. The high level of unemployment and the GDP per capita below the EU average are still their main distinguishing features. This is mainly a result of poverty and other problems in rural areas. Thus, Polish rural enterprises represent one of the best means of alleviating poverty and increasing the standard of living in Poland. Rural firms' engagement in local issues, the creation of new jobs and opportunities for people makes them one of the key factors

in the development of rural Poland. Therefore, the success of Polish rural micro-enterprises that constitute most of Polish SMEs is closely connected to the improvement of the quality of life in Poland.

In most European countries micro-enterprises' share of the total employment is 34% with about 93% of firms being micro-enterprises (European Commission, 2003; 2004a and 2004b). However, the growth and development of micro-enterprises is usually described in the broader context of the growth of the whole SMEs sector, of which they constitute a large part (about 95%). Thus, the issues related to micro-enterprise are very similar to those of the issues related to SMEs as a whole and our results may be relevant to a much wider area than the rural Polish food industry micro-entrepreneurs covered by the research study underlying the analysis of our paper.

Data

The analysis of this paper is based on a survey of rural food processing micro-enterprises in Poland. A micro-enterprise is defined according to the Recommendation of the EU Commission 2003/361/EC as an enterprise with 9 or less employees.

Two regions, represented by two Polish provinces, selected for our analysis sharply differ in their level of economic and social development. On the one hand, there is the less developed Warmia-Mazury province with the highest rate of unemployment in the country, undeveloped infrastructure and low business dynamics. On the other, there is the wealthiest Mazowieckie province. It is the site of the capital city Warsaw and the hub of the country's business activity. The initial conditions for rural enterprises in the food-processing sector in both provinces differ considerably. While a favourable business environment and economic development in the rich Mazowieckie province are likely to enhance the success of rural micro-enterprises, the low level of economic development in poor Warmia-Mazury province is likely to be an obstacle for their success.

In order to test the first version of our survey questionnaire, 30 pilot surveys were conducted in September-October 2004 in both Warmia-Mazury and Mazowieckie provinces. All pilot surveys were completed and no rejection was registered. The pilot survey has shown that the direct data (numbers) on enterprise profits, incomes and turnovers are unavailable to

obtain and the time horizon longer than three years creates problems for the surveyed. In accordance with this two major adjustments were made: (i) the questions about profits, incomes and turnovers were re-arranged in such a way that the surveyed entrepreneurs would have to choose clusters (ranges) of the values and not the direct values themselves and (ii) the time horizon of three years (2002–2004) was selected for all the variables in the main survey. In addition to that some minor re-wording and corrections were made.

The face-to-face questionnaire with 52 questions which was implemented between October 2005 and February 2006 consisted of six main sections. The main information section was used to get to know each enterprise better. The characteristics and motivation of the owner section was designed to obtain all relevant information about the enterprise owner/manager. Section three provided an in-depth view into the history and profile of the enterprise. Assets and sources of capital sections gave an overlook of the enterprise's most "sensitive" financial information. Section five was designed to obtain information on the enterprise's market position and competition. Section six concerned an overview of subjective factors of enterprise development. The detailed questionnaire is provided in Appendix 1. The data obtained using the questionnaire have been used in order to construct a profile of the typical owner/manager of a Polish rural micro-enterprise in the food-processing sector and typical micro-enterprise in this sector and to carry out an econometric analysis.

The scope of our questionnaire covered the main characteristics identified as important determinants of success, performance, profitability in recent studies of microenterprises all over the world. For the most recent representative studies, see Adekunle (2011), Anim-Somuah (2011), de Mel, McKenzie, and Woodruff (2008, 2009), Mano et al. (forthcoming), Mmbengwa (2011), Munoz (2010), and Rankhumise and Rugimbana (2010). Obviously, since the realities of Polish rural areas are very different from predominantly African or Asian areas covered by the vast majority of literature, the set of particular determinants of profitability in our paper is different from the determinants considered in the above presented literature dealing with developing countries.

Of the 351 enterprises contacted 306 surveys were obtained. Two surveys were not used (not complete for all variables) and the remaining 304 cases were entered into the database. On examination it was found that

14 cases were not appropriate for the survey. This was either because the enterprise size was beyond the sample objectives or because the surveyed enterprises were not classified as strictly food-processing. In order to reach the samples objective 10 additional surveys had to be carried out which finally made the sample complete.

Descriptive Stastistics of Our Sample

The general profile of the owner/manager in our sample was as follows. He was 40 years old, male, with a college or University diploma, established an enterprise himself using his own savings and has owned and managed it for 10 years. This high education level of rural Polish food processing entrepreneurs is quite an interesting feature showing an unusually high level of human capital. Obviously, the education level refers only to general human capital, not to any specific business training as considered by Berge, Bjorvatn and Tungodden (2011).

The typical owner/manager in our sample never followed any economic indicators. He came from the same province where he was currently working and was previously employed in the same or similar enterprise. His main motive for enterprise creation was seeking independence or risk-taking, although his enterprise registration was not smooth or easy. While the search for independence seems an obvious incentive, seeking risky activities as a main reason for establishing an enterprise is an interesting motivation.

The typical enterprise in our sample was established by its owner in 2000 or 2001 and it was a sole-trader company. It employed 6 people and was engaged in bakery, confectionery or meet-processing. It never applied for any patents or certificates for its products but had an Internet connection (usually Broadband). The typical enterprise was doing quite well: its turnover increased throughout the previous three years, it gained new clients and its average annual gross profit per employee was around 8000 Zloty (about 2000 EUR). It had its own branded products and sold them mostly on the local market.

The typical enterprise had 15 main competitors in the same parish and it was trying to compete with them by increasing the quality of its products and decreasing the price. It chose the region where it operated due to the

easy access to natural resources. The typical enterprise never received any financial help from local or central government and never applied for EU funding. In fact, Polish EU Accession was declared to be of no importance for the typical small rural enterprise. The main problems faced by the enterprise were locally and centrally-imposed taxes, fear of domestic competition and unfair government policies towards SMEs. Generally the typical enterprise would welcome the improvement of a favourable climate for conducting business activity in Poland.

Regression Model – Specifications And Interpretation

Specification of Regression Model

The linear econometric model used in our paper is a multivariate statistical model of the form:

$$Y = \beta_0 + \beta_1 X_1 + \ldots + \beta_n X_k + \varepsilon_i$$

where Y is the dependent variable defined as the enterprise profit per employee in 2004, $X_1,\ldots, X_k$ are the explanatory variables (the full list of variables with their description and expected signs is presented in Appendix 2) and ε is the error term.

The results of our estimations are conditional on a set of specification and diagnostic tests. Firstly, a heteroscedasticity test was run and heteroscedasticity was detected. Therefore, robust standard errors were used. Secondly, the Breusch and Pagan Lagrangian multiplier test for individual community effects was run. The results of the test are the following: $\chi^2(1) = 0.33$, prob > $\chi^2 = 0.5671$. This means that no individual community effects were detected. In addition, a Chow test with province dummy was run. This was done in order to test the interaction model against the whole sample model. The results of this test are as follows: $F(50, 199) = 0.83$, prob > $F = 0.7809$. This clearly shows that in this case the whole sample model is better for explaining the small enterprise profitability than using the model with detailed provincial level interaction terms. Given the results of our testing the ordinary least squares technique was used. The full results of the estimation are presented in Appendix 3.

In this section, we report the results of a stepwise regression model which was applied in order to identify the factors that are most significant for enterprise success. The model was run using the stepwise procedure in Stata. The removal threshold for entering the model was set at a 15% significance level (in order to see the variables which will over-bounce the 10% significance level). The results of our stepwise estimation are as follows:

Profitability = -15347 (10931)+3579 (1693) Rich Province Dummy**– 14 (6) Age Squared** + 16473 (10228) Risk – 5609 (2393) Cash** + 9994 (5230) Certificate* – 2987 (1973) Company Limited + 1386 (575) Enterprise Age Squared** – 4333 (2877) Family Firm – 1118 (530) Enterprise Size** –121 (80) Enterprise Age – 4904 (2902) Cooperative*. Numbers in parenthesis are robust standard errors, R^2 is 0.17, and *, **, ***, denote 10, 5, and 1 per cent levels of statistical significance respectively.

Interpretation of Regression Model

The major factors that came through as significant in our model are the owner/manager age, owner/manager motive for enterprise creation, enterprise size and enterprise location by province enterprise. Profitability is also on a lesser degree of statistical significance influenced by the legal status of the enterprise and by the use of modern technology as proxied by the use of international certificates for the products manufactured by the enterprise.

Generally, our results showed that the support of innovativeness, entrepreneurial spirit as well as some specially-targeted programs of entrepreneurial support might be crucial in increasing the success of Polish rural micro-enterprises.

It stemmed from the analysis of all enterprises that the owner/manager's age and enterprises location played a key role in the enterprise's success. This suggested that those two factors should be paid some special attention in analyzing the success of Polish rural micro-enterprises or influencing this success. These results also showed that enterprises in the rich Mazowieckie province are more profitable than those in the poor Warmia-Mazury province.

The enterprise size and legal status (being on a more advanced legal status – e.g. being a limited company or a stock company rather then

a sole trader) were negatively impacting the enterprise's success. This suggested that enterprises that were created as family enterprises and limited companies are less successful (earn less profit per employee) than sole-trader companies. Since by definition the microenterprise cannot have more than 9 employees, the very successful dynamically growing enterprises are by definition out of our sample. For the microenterprises with less than 10 employes, the negative influence of the size may indicate the governance and incentive allignment problems. These problems appear immediately when the entrepreneur (principal) employs the first worker (agent). They grow with the number of workers employed, especially when there are more workers, maybe even as few as 3 or 4, who do not work all the time alongside the entrepreneur so that direct management and monitoring of their effort level by the principal is not possible. The problems of coordination and moral hazard therefore may negatively influence the profitability of the enterprise as a function of its size measured by number of employees.

Factors such as Broadband Internet connection in enterprise (which was indicated as significant in an alternative specification of the model), cash motivation of the owner/manager and certificates obtained by the enterprise were also of considerable importance for the enterprise's success.

An interesting finding was that the owner/manager`s highest level of education did not matter for the enterprise's success in most cases. In addition, contrary to prior expectations, our working hypotheses about the importance of the owner/manager's business experience, competence in the field of enterprise activity and training in this field did not prove to be significant.

Our statistical inference also leads to the rejection of our working hypotheses about the importance of enterprise branded products, the number of main competitors and areas of advantage concerned the competitive environment for enterprise (assuming that all those would positively influence enterprise success). The main reason for this rejection might be due to the fact that due to the size of most enterprises (employing 6 people or less and usually being sole traders or small companies) it does not pay off to care too much about branded products or fighting competition.

The insignificance of our working hypotheses concerning "hard" and "soft" supports: e.g. grants, subsidies, loans, etc. ("hard supports") advice

and schooling ("soft supports") also raised some questions. The main reason for those factors to be insignificant for enterprise success might be the fact mentioned earlier that the majority of rural enterprises, particularly those in the food-processing sector, did not use those supports or simply did not know about them. An alternative argument would be that perhaps the criteria for allocation of both "hard" and "soft" supports were set too high and there was much paperwork and administration involved so that it did not pay off for small entrepreneurs to apply for them considering time and business constraints.

Conclusions and Policy Implications

It follows from our analysis that enterprises established by the owners/managers who were eager to engage in risky business activities were more successful than those which were established for the owner's self-realization. Additionally, enterprises that were established by the owner/manager who did not have any "inner" purpose (i.e. simply needed cash or followed the advice of family or friends) tended to be less successful than those which were established by the owner/manager for achieving self-realization. A wish for independence and self-efficiency of Polish rural entrepreneurs (owners/managers of the enterprise) is, therefore, confronted with the fear of unemployment and the need of cash. Those three factors can be equally important motives in enterprise creation. It appears that the majority of new enterprises established in Poland were created by people who were trying to utilize their business opportunity, get independence and self-realization and very few were created by individuals who were led mainly by the necessity to improve their harsh life conditions.

These findings about the inter-dependence of risk-seeking motive of establishing an enterprise and enterprises' success are very important as far as they unveil an important insight of the psychological profile of owners/managers of Polish rural micro-enterprises. Generally, they showed that risk-averse people who started their own business in rural Poland were less likely to become successful. Knowing this gives Polish policy-makers very powerful information. The main policy implication for the relevant Polish stakeholders is the need to be very careful about lending money to people who are starting their own businesses without a specific vision

or motivation. In other words, Polish government funding and various programs of rural and entrepreneurial development should be carefully targeted at the right groups of people. In addition, banks and financial institutions should not treat all Polish entrepreneurs according to the same standards. There are different categories and reasons for becoming an entrepreneur in rural Poland and those reasons may be the determinants of business success. Polish lenders or international agencies should be very weary to give too many loans to people who are starting their enterprises just because they have no other employment opportunity. This investment may be unsuccessful.

Moreover, it seems necessary for Polish policy-makers to identify the people who are risk-takers because they may make very successful rural entrepreneurs. In that sense, recruiting graduates at universities, schools and other educational establishments (e.g. organizing student competitions) may help. Additionally, it seems appropriate for the Polish government to create a good image of entrepreneurial activity in the country. Due to the rapid changes during the transformation, many entrepreneurs in the early 1990s made their money using fraud and illegal activities. That is why, even today, for the majority of Poles, the word "entrepreneur" is still a synonym of the word "thief". This image should be changed; being an entrepreneur should not be perceived as something negative. Possible promotion may include advertising campaigns that would highlight the excitement and self-reliance of being an entrepreneur, television spots and radio commercials in central and local TV and radio stations, information campaigns in schools and other educational establishments and organizing schooling for those who show interest in opening their own business.

The results of our descriptive statistics and statistical inference indicated that neither young nor old entrepreneurs were successful in running their enterprises. It seems that young owners/managers may have enough strength and energy to grow their enterprises; however, they lack credibility and skills possessed by the old owners/managers. It seems that a compromise between the two is the best acceptable solution.

It appears that the success of rural food-processing micro-enterprises is stronger in enterprises owned (or run) by the middle-aged owners/managers (with the optimal age for doing business being 40). This suggests that policies for support of small enterprises should develop specific forms of support for middle-aged entrepreneurs. For instance, attention should

be paid to the fact that middle-aged owners/managers are not that dynamic and innovative, not so well-acquainted with modern technologies and do not have such a good knowledge of foreign languages as their young counterparts. Older owners/managers obtained their education during socialism and many of them have difficulty catching up with the novel advancements of today. If the aim of Polish enterprise policy is to increase the success of those enterprises run by middle-aged owners/managers, specific forms of conveying information they lack should be found (i.e. free courses of using the Internet, language training, free information about applying for EU structural funds, government funding, etc.).

In general, it appears that younger and more educated people may be slightly more entrepreneurial. It also appears that more educated people in more developed regions tend to be successful and the firms they lead quickly surpass the limits of the micro-enterprise and grow into medium or large enterprises or they tend to search for paid employment in large regional centres. It is in the less developed regions in Poland that more educated people usually create their own enterprises. This brings one important recommendation for relevant Polish policy-makers: something should be done to attract more educated people to establish their enterprises in more developed regions. Although paid employment in Poland may seem less stressful and more secure for the majority of people, advantages of running a micro business enterprise in rural areas should be highlighted. Perhaps this can be done using some system of bonuses during enterprise establishment (e.g. a lower interest rate on enterprise credit or larger sum of a start-up loan) that are awarded to more educated people in more developed regions.

There is one more implication that comes from the data analysis and has to do with the level of education of owners/managers in rural food micro-enterprises in Poland and with EU funding. It appears that EU SAPARD funding went mostly to the enterprises headed by highly-educated owners/managers (e.g. those with Master and PhD. degrees). The causation, however, can be reverse: it may not be SAPARD funding that makes enterprises more successful. It may be that successful enterprises governed by the better-educated owners/managers are the ones who usually apply for SAPARD funding. In one way or another, this creates an additional recommendation for relevant Polish stakeholders and policy-makers: if they are going to provide Polish rural entrepreneurs with more funding

(especially from the EU structural funds), better-educated entrepreneurs should be the first to receive them.

Overall, it seems that allocation of people into entrepreneurship may not be so good in poor or less-developed regions in Poland (represented here by the Warmia-Mazury province). There are some problems with the allocation of people and enterprises by provinces: education matters in one province and does not matter in another. Probably poorly educated people who become entrepreneurs should not really go into business but still do (because they would not find any employment). It seems that in the context of intra-regional differences in rural Poland, establishing a micro-enterprise may be misused in less economically developed regions. As a result, there are enterprises created due to the lack of other employment alternatives by people who cannot become successful entrepreneurs. The existence of such enterprises is doomed and their creation and existence cannot be viewed as a meaningful contribution to the well-being of Polish rural regions.

Our results suggest that conditions for establishing and running an enterprise in rural Poland were region-specific. It is clear that rural micro-enterprises located in the rich Mazowieckie province were more successful than micro-enterprises in the poor Warmia-Mazury province.

It appears from our descriptive data analysis that establishing and running a limited or stock company requires enormous effort to set up and a good knowledge of enterprise-related specifics for operating in business, such as "tacit" knowledge (commercial law or accounting). Badly-educated owners/managers may not want to get involved in these troubles and prefer to run their business as sole-traders. Given the fact that sole-traders constitute the majority of small firms operating in Poland it yields one important suggestion for Polish policy-makers. It may be that simplifying the process of registering limited and stock companies can increase their numbers in Polish rural areas. This, in turn, may lead to increasing employment and the well-being of the population in these areas, especially in less developed rural regions.

The fact that all forms of commercial enterprises were less successful with respect to sole-trader can be partially explained by the existence of the "gray" economy and a problem with incentives allignment in joint decision-making in small rural enterprises when too many people (i.e. family-members or relatives) try to run the company. This may also suggest that many individuals who established a small business enterprise did

not want to get involved in the creation and maintenance of the limited company or cooperative. Enterprise laws and tax regulations in Poland are very complicated and intransparent, which is supported by the findings by entrepreneurs and entrepreneurial agencies (see the report of Polish Agency for Enterprise Development, 2003). Becoming a sole-trader is seen by Polish entrepreneurs as less cumbersome, especially with regard to enterprise administration and taxation. A clear message for the relevant Polish stakeholders is that enterprise law should be amended considerably. Softer regulation and less pressure on enterprises, especially within the first years of existence, may be a good start for such a policy. This may be followed by the introduction of considerable changes in enterprise law and labour law. Polish policy-makers may also consider changing these laws using a more liberal approach to entrepreneurship that exists in other EU countries.

The number of an enterprise's main competitors was important in the Warmia-Mazury province and was not important in the Mazowieckie province. Moreover, the results of our descriptive data analysis show that either the number of the enterprise's main competitors negatively/positively impacted enterprise profit per employee in the previous years (for which the data is not available), or that micro-enterprises are so small and supply such small regional units that they can find their customers without competing with each other. This finding may suggest a lack of development on the respective markets. People become entrepreneurs because they have to (although some of them should not). The number of competitors would not matter if people were doing what they wanted to do because everybody would be in the job. People would be going to the jobs and occupations where the returns to their abilities and qualifications are highest (providing that the labour market allocation process works well). If this allocation process does not work properly, people create enterprises in the business sectors where lots of other competing firms operate. This makes it quite clear for newcomers that they will have to compete and will probably not do so well. However, there is simply nothing else they can do and the creation of a small business is often their only opportunity. This provides some sensible explanation of the processes that are going on the Polish labour market. The problem about it is that there is nothing much to be done in policy terms. Perhaps, as poor regions and provinces in Poland develop, the situation will improve (and labour market allocation will improve). However, if policy-makers are concerned about the labour market allocation

today and they think that giving assistance to entrepreneurs is crucial, they should also realize that many potential entrepreneurs are probably not that good. There should be a lot more screening before providing assistance to micro-enterprises in less developed provinces, than in the more developed ones. Enterprises that are eligible for that assistance should be carefully selected and monitored.

Additionally, the results of this study show that modern technologies (especially information and communication) can play a very decisive role in the success of Polish rural micro-enterprises. First of all, it appeared that more educated owners/managers of rural micro-enterprises located in both provinces used the Internet more often. Secondly, it appeared that the quality of the Internet connection also mattered: well-educated owners/managers of micro-enterprises in both provinces tended to use Broadband Internet connection.

Generally, it seems that the Internet and, in particular high-speed Internet (via Broadband), can be very significant determinants of success of micro-enterprises in rural areas. High-speed Internet may be used by rural enterprises in many ways: from IP Internet telephony to buying and selling items/products through the Internet, as well as advertising products on the Internet. According to Gillet and Lehr (1999), the importance of Broadband Internet access has important policy implications. The presence of the Internet in the firm induces telecommunication companies to broaden their definition of universal service; another aspect is that the Internet can help facilitate competition among alternative physical infrastructure networks (telephone networks, electric utility power lines, cable television cables, or wireless networks) which can result in the liberalization and competition among providers of telecommunication services (Gillet and Lehr, 1999). Thus, policy support should include extending the fast and reliable Internet network all over the country with a special impact on rural areas. If the goal of national policy is to make small rural enterprises competitive and successful, it should enable them to go hand in hand with technological progress and innovations.

Finally, it seems that micro-enterprises that were concerned about their property rights and authorship were the ones that tended to be more successful. Enterprises that had branded products also had broader spread of sales (they supplied not just the local markets, but also tended to sell country-wide and even exported). Enterprises with certificates for

their products seemed to be more successful than those without them. Certification of products still remains a problem in rural Poland: the costs of certification are too high and obtaining them may be problematic (Polish Agency for Enterprise Development, 2006; Zolnierski, 2005). Therefore, there is a need for the relevant government policy targeted at overcoming these barriers. For instance, the introduction of reduced fees for small entrepreneurs or bearing the part of the certification costs (especially with regard to international certificates) may be of some help in familiarizing small firms with certification. Another question is whether rural micro-enterprises need those certificates and licenses. It may be that small firms are not interested in obtaining them. However, the strict environment of the EU Single Market and tightening competition among enterprises in the EU and between EU and other parts of the world makes certificates and licenses one of the essential rules of doing business in Europe. Polish rural micro-firms have to learn how to play by these rules.

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APPENDICES

Appendix 1

(Translation from Polish) **IDARI SURVEY**

SUCCESS FACTORS OF POLISH RURAL MICRO- ENTERPRISES

A. MAIN INFORMATION

A1. Date of survey		**A2. Province**	**Code**

A3. Name		**A4. Parish/community**	**Code**

A5. When was the enterprise created?		**Code**		
Please fill in the year				

A6. Legal form of enterprise (Polish small business classification) *(Please, mark the most appropriate)*	**Code**
Sole-trader	
Family firm (joint stock company)	
Limited liability company	
Unlimited partnership	
Civil law partnership	
Cooperative	
State-owned enterprise	
Other (What?)	

A7. Structure of ownership (*in %*)	**Code**
Physical entities	
Financial institutions	

Local producer (firm) inside the main type of production	
Local producer (firm) outside the main type of production	
Foreign investor	
Cooperative	
Other (What?)	

A8. Number of employees:	**Code**

A9. **Short description of the enterprise activities:**
Please, name 3 main products your enterprise produces/sells:
1. _____
2. _____
3. _____

B. CHARACTERISTICS AND MOTIVATION OF THE OWNER

B1. How did the entrepreneur start his career in the enterprise?		**Code**	
Created it him/herself	1		
Inherited the enterprise	2		
Bought the enterprise from family members	3		
Bought the enterprise from strangers	4		
Partly inherited, partly bought	5		
Was appointed a lead manager without owning the enterprise	6		
Was employed by the owner of the enterprise	7		
Other – explain			

B2. What is the educational level of the entrepreneur?		**Code**	
Incomplete primary school	1		
Primary school	2		
College	3		
Post-college education	4		

University 1st level	5	
University 2nd level (M.A. or PhD.)	6	

In case the entrepreneur does not have post-college education (last three categories of question B2) proceed to question B4

B3. What are the most important skills the manager of the successful firm has? (*Please, mark one most appropriate*)		**Code**	
Computer literacy	1		
Motivating personnel for more effort in work	2		
Familiarity with finances and book-keeping	3		
Administration skills	4		
Gathering relevant information	5		
Familiarity with marketing and sales	6		
Defining of the enterprise's policy	7		
Familiarity with technological and industrial processes	8		
Other (please name)	9		

B4. When did the entrepreneur take up the leading/ managerial position in the enterprise?		**Code**	
Year:	15–16		

B5. What was the occupation of the entrepreneur before taking up a leading position in the surveyed enterprise?		**Code**	
Employed in this very enterprise	1		
Employed in the similar enterprise	2		
Employed in the organization or enterprise with another form of activity	3		
Being a student (full or part-time)	4		
Unemployed	5		
B6. What is the link of the entrepreneur to the region in which the enterprise operates?		**Code**	
Entrepreneur comes from the region and has been working here	1		
Comes from the region, left it and came back	2		

Came to the region regardless of the enterprise	3		
Moved to the region to work in the enterprise	4		
Drives/comes to work from another region	5		

B7. What is the age of the entrepreneur?						**Code**	
Below 29	30–39	40–49	50–59	60–69	Above 70		
1	2	3	4	5	6		

C. HISTORY AND PROFILE OF ENTERPRISE

C1. What was the main reason for establishing the enterprise? (*Please, mark one most appropriate*)	**Code**		
Seeking self-realization	1		
Seeking independence	2		
Seeking risky activities	3		
Need to make money	4		
Unemployment or threat of unemployment	5		
Following family or friends	6		
Family tradition	7		
Other (what?)	8		
No answer	9		

C2. Why was your enterprise located in that region? (*Please, mark one most appropriate*)	**Code**			
Family or personal reasons	1			
Wish to make extra money in non-farm activity (for farmers)	2			
Favourable perspectives for entrepreneurs	3			
Proximity to the resources/ what resources? State explicitly.	4			
Low costs of resources used in production	5			
Proximity of local agents	6			
Proximity to labour sources	7			
Proximity to sales markets	8			
Specialization of the region in the firm's product	9			

Good infrastructure and communication	10	
Financial help from the Polish government or the EU	11	
Other forms of governmental assistance	12	
Other (*please, name what*)	13	
Do not know	14	

C3. Does your firm hold:		**Code**	
International certificates (ISO, TUV, etc.)	1		
Licenses for specific production	2		
Own patents for the good/s it produces	3		
Awards or diplomas (i.e. entrepreneur of the year) of national and international importance	4		
Other (please, name what)	5		
None of the above	6		
C4. Does your firm have stable internet connection?	**Yes**	**No**	**Code**
Does your firm have broad-band??			

C4a. Does your firm have its own website?	**Yes**	**No**	**Code**

D. ASSETS AND SOURCES OF CAPITAL

D1. Sources of the founding capital: (*Please, mark one most appropriate*)	**Code**		
Owner or leading manager	1		
Family members	1		
Private entities (not family members)	1		
Other enterprises, banks or financial institutions	1		
Subsidies	1		
Do not know	1		
D2. What is the source of the firm's assets? (*Please, mark one most appropriate*)	**Code**		
Income of the enterprise	1		
Loans from physical entities	1		
Bank loans	1		
Subsidies	1		

D3. Share of the own capital in the enterprise in 2002 (in %)	**Code**				
Own capital	59–62				

D4. If you were to compare the level of firm's assets 3 years ago and now, what would be the change?	**Code**				
No change	1				
Increase (% increase)	2				
Decrease (% decrease)	3				

If there was a change in capital, please answer question D5

D5. What was the increase/decrease of firm's physical capital in the last 3 years?		**Code**			
Increased by:	Decreased by:				

D6. Which of the following ranges best describes enterprise's annual turnover in each of the last three years?				**Code**		
PLN	**2002**	**2003**	**2004**			
Less than 59 thousand PLN	1	1	1			
60 thousand PLN – 99 thousand PLN	2	2	2			
100 thousand PLN – 149 thousand PLN	3	3	3			
150 thousand PLN – 209 thousand PLN	4	4	4			
210 thousand PLN – 279 thousand PLN	5	5	5			
280 thousand PLN – 259 thousand PLN	6	6	6			
260 thousand PLN – 349 thousand PLN	7	7	7			
350 thousand PLN – 450 thousand PLN	8	8	8			
More than 450 thousand PLN	9	9	9			

D7. Has the enterprise had gain or profit* in the last three years?				**Code**
	2002	**2003**	**2004**	
	Loss	**Loss**	**Loss**	
	Profit	**Profit**	**Profit**	
If your firm has achieved profit, please mark which cluster better describes its value				
Profit up to 19 thousand PLN	1			
Profit from 20 ths. PLN to 39 ths. PLN	2			

Profit from 40 ths. PLN to 69 ths. PLN	3			
Profit from 70 ths. PLN to 109 ths. PLN	4			
Profit from 110 ths. PLN to 159 ths. PLN	5			
Profit from 160 ths. PLN to 219 ths. PLN	6			
Profit from 220 ths. PLN to 289 ths. PLN	7			
Profit from 290 ths. PLN to 369 ths. PLN	8			
Profit from 370 ths. PLN to 459 ths. PLN	9			
Profit from 460 ths. PLN to 560 ths. PLN	10			
Profit above 600 thousand PLN	11			

*** profit is defined as the gross profit (revenues minus costs) per enterprise per year (before taxing)**

D8. What is the age of: machines and equipment used in your firm?	**Code**			
buildings and warehouses used in production process?				

E. FACTORS OF THE ENTERPRISE DEVELOPMENT

Position on the market

E1. What was the structure of the firm's sales in each of the following years according to the geographic spread of sales (in %)	**Code**			
2002 Local markets				
Region				
Rest of the country				
Abroad				
2003 Local markets				
Region				
Rest of the country				
Abroad				
2004 Local markets				
Region				
Rest of the country				
Abroad				

E2. What was the share of the marked products in the whole volume of sales in 2004 (in %)?	**Code**			
No trademark				
Own trademark				
With a trademark of a processor				
With a trademark of a distributor				
With other trademarks				

E3. How many new clients did your firm gain in the last three years?						**Code**	
none	1	2 – 5	6 -19	20 - 49	50 +		
1	2	3	4	5	6		

E4. How does your enterprise distribute its products?	**Code**			
Own shop				
Warehouses				
Supermarkets				
Small retail shops				
Bazaars				

General conditions for competition

E5. How many enterprises in the county/region produce similar products to what your enterprise produces?	**Code**			

If question E5 states that there are no such enterprises, please proceed to question E7

E6. What gains and losses for your enterprise bring the presence of competition in the region? (*Please, mark one most appropriate*)			
Firms bidding for qualified workers (buying them out)	1	**Code**	
Production at lower costs but with lower quality	1		
No gains	1		
Possibilities of informal marketing and distribution	1		

Possibilities of formal cooperation in marketing and distribution			1		
Easier access to new technologies			1		
Easier access to the sources of raw materials			1		
Easier access to the local labour force			1		
Selling your products in another region			1		
Selling your products abroad			1		
Other gains *(please name which)*					
E7. In which of the following spheres does your enterprise compete more often?				**Code**	
Prices	Services and client's care	Product quality	Innovativeness of the product		
1	2	3	4		

F. EXTERNAL FACTORS OF DEVELOPMENT

F1. What regional factors either helped or impacted negatively on the development of your enterprise in the last 3 years? (*Please, mark one most appropriate*)					
	Positive influence	**No influence**	**Negative influence**	**Code**	
Strategy of local government (support of SMEs)	1	2	3		
Financial help of local government for SMEs	1	2	3		
Attitude of local government to SMEs	1	2	3		
Locally-imposed taxes (regional tax)	1	2	3		
Centrally-imposed taxes (i.e. income tax)	1	2	3		
Organization of thematic schooling for rural society	1	2	3		
Access to resources	1	2	3		

Access to sales markets of products and services	1	2	3		
Costs of entering the business	1	2	3		
Other *(please, specify)*	1	2	3		

F1a. What factors represent the most serious barriers to the development of small and medium (SMEs) enterprises in the country? (*Please, mark one most appropriate*)			
Fears of competition with the firms from the "old" EU		**Code**	
Fears of Polish competition			
Inexistence of business networks and cooperation between Polish SMEs			
Unfair competition of foreign enterprises operating on the Polish market			
Loss of the Eastern markets (former USSR)			
Unfair competition between Polish SMEs			
Economic crisis in Poland and in the EU			
Availability and cost of labour force			
Availability and cost of service necessary for your business			
Unstable and unclear laws concerning SMEs			
Unclear and inexplicit state tax and revenue system			
Inexistence of formal groups lobbing for the SMEs of agricultural and food sector			
Costs of innovation			
Technology used in production process			
Gaining new qualifications			
Gaining new methods of production and accounting			
Unsatisfactory work of the self-governments			
Problems with entering the EU Single Market			
Quality norms introduced by the EU			
Unclear government policy towards SMEs			

Consumption of goods and services by consumers (consumers' purchasing power)				
Other (please specify):				
F2. Has your enterprise received:	**Yes**	**No**	**Code**	
a preferential credit for your business in the last 3 years?	1	0		
a business credit for your business in the last 3 years?	1	0		

If the answer to the above question is "yes" please answer question F2a.

F2a. How has the level of credit (interest rates) impacted the growth of your enterprise?					
Nature of impact	**Positive influence**	**No influence**	**Negative influence**	**Code**	
	1	2	3		

F3. What economic processes evolved positive or negative influence on the enterprise's success in the last 3 years? (*Please, mark one most appropriate*)					
	Positive influence	**No influence**	**Negative influence**	**Code**	
Exchange rate	1	2	3		
Per cent (level) of credit	1	2	3		
Central government taxes	1	2	3		
Local taxes	1	2	3		
Level of inflation	1	2	3		
Enterprise creation procedure	1	2	3		
Purchasing power of the consumers	1	2	3		
Economic growth in the country	1	2	3		
Labour law	1	2	3		
Opening of EU Single Market for Polish goods					
other *(please specify):*					

F4. Whether the enterprise has been receiving public assistance (governments and local governments) in the last 3 years? (Please, mark the appropriate).								
Nature of assistance	**YES**	**Regional sources**	**Central governmental soures**	**EU sources (SAPARD)**	**Code**			
Grants or investment loans	1	2	3	4				
Funds for research and development	1	2	3	4				
Funds for the promotion of local production groups	1	2	3	4				
Assistance in schooling of the personnel	1	2	3	4				
Space for the enterprise (housing)	1	2	3	4				
Export guarantees	1	2	3	4				
Consulting in the sphere of governance	1	2	3	4				
General economic consulting	1	2	3	4				
Other *(please, specify)*	1	2	3	4				
Has not recieved	0							

If the answer to the question F3 is „has not received", please proceed to question E5. If your firm has received some assistance from EU SAPARD fund, please answer the following question:

F5. What was the amount of funds your enterprise has received from EU SAPARD program in the last 3 years? *(Please, mark the appropriate cluster)*		**Code**	
Funds below 8 thousand PLN	1		
Funds 9 thousand - 19 thousand PLN	2		
Funds 20 thousand – 39 thousand PLN	3		
Funds 40 thousand – 59 thousand PLN	4		
60 thousand PLN – 99 thousand PLN	5		

100 thousand – 149 thousand PLN	6		
150 thousand – 179 thousand PLN	7		
Above 250 thousand PLN	8		

F6. How does your firm participate in EU Single Market after the Polish accession to the EU?		**Code**	
We are not interested in this issue/the EU accession has not impacted on our firm	1		
Participation in schooling and conferences	2		
Looking for new partners on EU Single Market	3		
Improving the quality of our own products and services	4		
Learning foreign languages by the management of the firm	5		
Increasing of export	6		
Looking for new markets in the EU	7		
Other (what?)	8		
No answer	9		

F7.Regarding Polish EU accession, what could be the main reasons for SMEs in rural Poland to go bankrupt or leave the business? (*Please, mark one most appropriate*)		**Code**	
Low quality of products created by Polish SMEs	1		
High production costs of Polish SMEs	2		
Inability to cope with EU standards	3		
lack of basic capital	4		
lack of managerial skills	5		
takeover by foreign competitors	6		
Other (what?)	7		
No threats	8		
Do not know	9		

F8.What are the most relevant actions local governments can undertake to help the development of your enterprises? (*Please, mark one most appropriate*)		**Code**	
Playing mediators in the potential conflicts between SMEs	1		

Creation of suitable environment for SMEs	2		
Supporting enterprises using the means of local governments	3		
Interconnecting the success of SMEs with the strategy of regional development	4		
Influencing competitiveness between SMEs through the policy of issuing licenses and permits	5		
Others (please, mark the appropriate)	6		

F9. Do you know the development strategy of your parish?	**Yes**	**No**	**Code**	
If the answer to the question F9 is „yes", please proceed to question F9a	**1**	**0**		
F9a. Is the growth of SMEs foreseen in the development strategy of your parish?	**Yes**	**No**	**Code**	
	1	0		

F10.Which targets of the regional policy are the most relevant from your point of view for the success of your enterprise? (*Please, mark one most appropriate*)		**Code**	
Creation of work places	1		
War with unemployment by modernization of production of trade and services	2		
Creation of favourable environment for conducting business activity	3		
Support of the production and services	4		
War on unemployment by re-animating the traditional sectors of economy	5		
Creation of favourable climate for the increased inflow of FDI	6		
Helping enterprises to enter the EU Single Market	7		
Rebuilding Polish entrepreneurial tradition lost in socialism	8		
Increasing the competitiveness of Polish SMEs	9		
Supporting innovation and research in SMEs	10		
Others (please, mark the appropriate)	11		

F11. Would you describe local authorities as open for negotiations with SMEs concerning reducing local taxes and providing favours for entrepreneurs?	Yes	No	**Code**	
	1	0		

F12. How would you describe the process of registering your firm at the local parish economic office? *(please mark up to two relevant answers)*		**Code**	
Quick and easy			
Transparent			
Taking no time and energy			
Slow and complicated			
Taking too much time and energy			
Excessively bureaucratic			
Is not transparent, includes giving bribes to the officials			
Other (what?)			
None of the above			

F13. Do you follow the main economic indicators in your daily business? Please, mark the ones you do follow:		**Code**	
PLN/EUR (or USD) exchange rate	1		
GDP growth of Polish economy	2		
Stock exchange indices	3		
Interest rate as set up by the Polish Central Bank	4		
Economic indicators/price variations in the EU	5		
Level of inflation	6		
I do not follow any indicators	7		

Thank you for your cooperation!

Appendix 2

Table A1. Variables used in the econometric model for testing the main research hypotheses and their categories (levels)

Name	Variable Definition	Variable type	Expected sign
Enterprise success (dependent variables)			
Y	Enterprise gross profit per employee in 2004	Polish Zloty (PLN)	
X_1	Owner/manager reason for establishing an enterprise	1 = self-realization 2 = independence 3 = risk 4 = need of cash 5 = threat of unemployment 6 = influence of family and friends 7 = family tradition	+ self-realization, independence and risk are expected to have higher influence on enterprise success
X_2	Owner/manager education	1 = primary 2 = secondary 3 = college 4 = university second level 5 = university third level	+ relationship between education and enterprise success
X_3	Owner/management business experience	Years	+
X_4	Owner/manager training	Dummy (1 = obtained some training in the field related to the firm area of business, 0 = otherwise)	+
X_5	Owner/manager age	Years	+
X_5	Owner/manager age squared	Years	-
X_6	Owner/manager previous sector experience	Dummy (1 = experience in the same sector of economy, 0 = otherwise)	+

Name	Variable Definition	Variable type	Expected sign
Enterprise success (dependent variables)			
X_7	Owner/manager ties to the region	Dummy (1 = close ties, 0 = otherwise)	+ relationship between
X_8	Age of the enterprise	Years	-
X_8	Age of the enterprise squared	Years	-
X_9	Establishing of enterprise on local market	Dummy (1 = strategic reasons, 0 = otherwise)	+
X_{10}	Legal form of the enterprise	1 = sole-trader 2 = family enterprise 3 = limited liability company 4 = unlimited partnership 5 = civil law partnership 6 = cooperative	Sole-traders are expected to perform better than commercial companies
X_{11}	Location of the enterprise by the province	Dummy (1 = Mazowieckie province, 0 = Warmia-Mazury province)	Expect some regional differences
X_{11}	Location of the enterprise by parish	Parish dummy	Expect some regional differences
X_{11}	Location of the enterprise by community	Community dummy	Expect some regional differences
X_{12}	Distance from the parish to the regional centre	Kilometers	Expect some differences
X_{13}	Size of the enterprise	Number of employees	-
X_{14}	Ownership of the enterprise	Dummy (private sources =1, 0 = otherwise)	Enterprises owned by physical entities of families tend to be more successful
X_{15}	Internet in the enterprise	Dummy	+
X_{16}	Broadband in the enterprise	Dummy	+

Name	Variable Definition	Variable type	Expected sign
Enterprise success (dependent variables)			
	Enterprise product/ good	1 = products of vegetal origin 2 = products of animal origin 3 = secondary-processed products 4= beverages	Expect some product differences
X_{17}	The fact that enterprise has branded products	Dummy	+
X_{18}	Number of enterprise's main competitors	Number of firms	-
X_{19}	Areas in which enterprise is exploiting its advantage	1 = prices 2 = services 3 = quality of products 4 = innovativeness of products	- + + +
X_{20}	Enterprise's innovation	1 = know-how 2 = international certificates 3 = licenses 4 = patents (valid on the national level)	+ + + +
X_{21}	Government financial support	Dummy	+
X_{22}	Negotiations with local governments on tax reduction	Dummy	+
X_{23}	EU SAPARD funds in the enterprise	Dummy	+ Enterprises that managed to obtain funds from EU program are more successful
X_{24}	Public non-monetary assistance to the enterprise	Dummy	+

Name	Variable Definition	Variable type	Expected sign
Enterprise success (dependent variables)			
X_{25}	Enterprise participation in local schooling	Dummy	+
X_{26}	The fact whether enterprise obtained the credit	Dummy	+
X_{27}	Enterprise distribution of sales in 2002–2004	Dummy (1 = local market and beyond (local market +), 0 = local market)	Enterprises with broader distribution of products are more successful
X_{28}	Impact of Polish EU accession on the enterprise	Dummy (1 = some impact, 0 = no impact)	+ enterprises that utilize the opportunities of EU Accession tend to be more successful

Appendix 3

Table A2. Complete results of the model estimation

	Interact Model		**Whole Sample Model**	**Rich Province Only**	**Poor Province Only**
	Poor	**Rich*Dummy**	**FullFull**	**RichFull**	**PoorFull**
Independence	-4879.227**	7690.613*	-450.965	2811.386	-4879.227**
	[2326.191]	[4465.039]	[1661.613]	[3870.294]	[2295.371]
Risk	-860.405	28914.773*	15417.722	28054.368*	-860.405
	[2310.763]	[16175.833]	[10854.081]	[16258.082]	[2280.148]
Cash	-839.787	-7230.869	-5516.105*	-8070.657*	-839.787
	[1720.035]	[4790.153]	[2828.158]	[4539.981]	[1697.246]
Unemployment	1163.376	-841.91	225.34	321.466	1163.376
	[1616.715]	[6714.343]	[2688.016]	[6617.805]	[1595.295]
Family and friends	-3698.703	-3893.988	25.796	-7592.691	-3698.703
	[2471.873]	[9969.158]	[2804.136]	[9807.537]	[2439.124]
Family tradition	8376.180***	-14295.651**	488.691	-5919.471	8376.180***
	[2253.847]	[6380.053]	[2823.775]	[6061.203]	[2223.986]
Secondary	4050.646	-6209.66	-108.404	-2159.014	4050.646
	[3223.200]	[14239.394]	[7309.527]	[14084.777]	[3180.496]
College	6705.950**	-5179.548	2977.408	1526.402	6705.950**
	[3029.934]	[16226.303]	[8129.896]	[16187.983]	[2989.790]
University Second Level	2683.841	-1351.674	799.034	1332.166	2683.841
	[2990.964]	[14920.651]	[7702.123]	[14844.368]	[2951.337]
University Third Level	2242.24	-6835.293	-2621.97	-4593.053	2242.24
	[2567.331]	[14926.355]	[7612.109]	[14931.813]	[2533.316]
Years of Experience	174.264	-399.713	-132.575	-225.449	174.264
	[143.960]	[345.798]	[207.997]	[319.280]	[142.053]
Training	1126.89	-6490.381	-2476.185	-5363.491	1126.89
	[1587.154]	[8859.795]	[3319.756]	[8851.576]	[1566.126]

	Interact Model		Whole Sample Model	Rich Province Only	Poor Province Only
	Poor	**Rich*Dummy**	**FullFull**	**RichFull**	**PoorFull**
Age	23.923	2483.228	1747.731**	2507.150*	23.923
	[665.867]	[1557.164]	[846.488]	[1429.433]	[657.045]
Age Squared	-0.892	-23.349	-17.119**	-24.242*	-0.892
	[7.654]	[15.584]	[8.328]	[13.786]	[7.553]
Previous Experience	-2101.268	794.288	-285.37	-1306.98	-2101.268
	[1959.161]	[5825.875]	[2145.442]	[5571.615]	[1933.205]
Ties to the region	-1792.893	1950.517	1508.339	157.624	-1792.893
	[1788.102]	[6426.071]	[2549.664]	[6267.951]	[1764.412]
Enterprise Age	87.053	-801.108	-404.269	-714.054	87.053
	[212.427]	[658.448]	[368.048]	[632.900]	[209.613]
Ent. Age Squared	-5.041	17.766	6.137	12.725	-5.041
	[4.493]	[13.929]	[7.342]	[13.389]	[4.433]
Position on Local Market	-1709.12	2717.529	-187.852	1008.408	-1709.12
	[1615.801]	[4021.753]	[2079.895]	[3739.974]	[1594.394]
Family Firm	-2315.448	-2560.523	-3938.441	-4875.971	-2315.448
	[4425.126]	[6810.199]	[2902.323]	[5256.825]	[4366.498]
Company Limited	-1586.57	-7728.254	-3122.072	-9314.825	-1586.57
	[2247.897]	[6462.077]	[2674.628]	[6152.403]	[2218.115]
Unlimited partnership	-2221.737	8996.111	1967.436	6774.374	-2221.737
	[2147.831]	[9099.524]	[3560.811]	[8979.462]	[2119.374]
Civil Law Partnership	2220.713	2330.49	4486.705	4551.203	2220.713
	[1631.208]	[6876.313]	[3651.632]	[6783.572]	[1609.596]
Cooperative	2278.973	-18820.948**	-6955.796*	-16541.975*	2278.973
	[3913.659]	[9244.871]	[3569.493]	[8505.434]	[3861.807]
Distance from City	-20.814	-121.57	-42.513	-142.384	-20.814
	[18.671]	[88.179]	[29.462]	[87.516]	[18.424]

	Interact Model		Whole Sample Model	Rich Province Only	Poor Province Only
	Poor	**Rich*Dummy**	**FullFull**	**RichFull**	**PoorFull**
Enterprise Size	-967.166**	-652.12	-1279.577**	-1619.286**	-967.166**
	[420.548]	[866.398]	[534.684]	[769.227]	[414.976]
Ownership	2523.141	-7953.918	-2871.24	-5430.777	2523.141
	[4437.272]	[8743.351]	[4322.631]	[7650.481]	[4378.483]
Internet	1090.495	-3694.233	571.427	-2603.739	1090.495
	[1590.438]	[5681.551]	[2236.916]	[5538.946]	[1569.367]
Broadband	3140.063	4624.058	2801.958	7764.121	3140.063
	[2392.986]	[5815.045]	[2692.783]	[5381.992]	[2361.282]
Animal Origin Products	-1122.974	-5054.812	-2915.222	-6177.786	-1122.974
	[4190.953]	[10168.009]	[4855.725]	[9407.733]	[4135.427]
Secondary-processed	-2215.041	-4017.584	-3302.457	-6232.625	-2215.041
	[3590.915]	[9364.197]	[4455.974]	[8782.371]	[3543.340]
Beverages	-4326.46	-17121.936	-4870.743	-21448.396*	-4326.46
	[3305.966]	[12772.391]	[5758.735]	[12528.343]	[3262.165]
Trademark	2592.625	-6566.443	-302.534	-3973.817	2592.625
	[1683.782]	[4182.132]	[2487.619]	[3887.534]	[1661.474]
No. of Main Competitors	-159.748*	200.885*	-25.547	41.137	-159.748*
	[93.856]	[115.027]	[55.386]	[67.530]	[92.613]
Competition in Price	2122.757	-1912.327	1084.647	210.43	2122.757
	[1393.043]	[3928.881]	[1722.795]	[3730.567]	[1374.587]
Competition in Services	-1252.179	14828.549	2988.28	13576.37	-1252.179
	[2151.548]	[11287.980]	[4039.091]	[11252.787]	[2123.043]
Competition in Quality	-1139.222	15228.401**	2903.644	14089.179**	-1139.222
	[1716.336]	[6851.433]	[2457.365]	[6735.781]	[1693.596]
Competition Novel Products	4905.301	-514.506	5367.254	4390.796	4905.301
	[5883.812]	[9255.640]	[4297.290]	[7255.504]	[5805.858]

	Interact Model		Whole Sample Model	Rich Province Only	Poor Province Only
	Poor	**Rich*Dummy**	**FullFull**	**RichFull**	**PoorFull**
Innovation	3208.438*	380.21	2885.171	3588.648	3208.438*
	[1862.799]	[6079.570]	[2871.604]	[5876.853]	[1838.119]
Certificates	1131.176	9206.492	7793.001	10337.668	1131.176
	[3337.758]	[9380.597]	[4768.458]	[8902.578]	[3293.536]
Licenses	-452.309	-1972.354	-3448.77	-2424.663	-452.309
	[2734.045]	[6885.605]	[3249.927]	[6417.489]	[2697.822]
Patents	-6600.508**	-820.65	-5804.595	-7421.158	-6600.508**
	[3229.641]	[7983.597]	[3834.470]	[7414.347]	[3186.852]
Financial Help	-3960.001	7164.805	-2364.786	3204.804	-3960.001
	[2837.151]	[8688.956]	[3292.034]	[8340.000]	[2799.562]
Tax Neg.	356.509	-1495.901	1220.802	-1139.392	356.509
	[1617.087]	[7421.758]	[3569.590]	[7355.718]	[1595.662]
SAPARD	12133.332	-16640.746*	3818.879	-4507.413	12133.332
	[7613.062]	[9710.799]	[4038.077]	[6121.779]	[7512.197]
Schooling	1683.613	-2609.099	313.698	-925.486	1683.613
	[1517.101]	[4397.404]	[1899.377]	[4191.391]	[1497.001]
Credit	-134.354	-2855.972	-571.255	-2990.327	-134.354
	[1584.994]	[4377.676]	[2588.190]	[4143.916]	[1563.995]
Distribution of Products	448.821	133.583	576.558	582.404	448.821
	[1528.661]	[4301.986]	[2182.191]	[4083.556]	[1508.408]
Polish EU Membership	-1291.968	-747.8	-159.882	-2039.767	-1291.968
	[1643.119]	[4417.382]	[1749.315]	[4163.973]	[1621.349]
Rich Province Dummy			6349.443*		
			[3339.157]		
Constant	10693.742		-17957.776	-11423.405	10693.742
	[13652.785]		[19064.051]	[35873.601]	[13471.900]
Observations	299		299	141	158
R-squared	0.43		0.23	0.41	0.47

Robust standard errors in brackets; * significant at 10%; ** significant at 5%; *** significant at 1%

Source: own estimations.

Table A3. Results of the tests used in computations of the large model

Cook-Weisberg test for heteroscedasticity using fitted values of profit per employee in 2004 (dependent variable)		**Breusch and Pagan Lagrangian multiplier test for random effects**		**Chow test with province dummy**	**Chow test without province dummy**
Ho:	Constant variance	profit_per_employee_2004 [nscomm,t] = Xb + u[nscomm] + e[nscomm,t]		Tests interactions model against the full model	Tests interactions model against the full model
chi2(1)	1101.57	**chi2(1)**	0.33	F(50, 199) = 0.83	F(50, 199) = 0.83
Prob > chi2	0.0000	**Prob > chi2**	0.5671	Prob > F = 0.7809	Prob > F = 0.7809

Source: own estimations.