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The role of SMEs in sustainable regional development and local business integration: The case of Lublin region (Poland)

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Abstract

This paper analyses the role of SMEs in regional development, focusing the particular case of Lublin Region in Poland. By using a questionnaire presented to firms that are operating in manufacturing and construction sectors were analysed several issues related to firms themselves, and their sustainability strategies. The sustainability strategy was measured through the combination of the three main perspectives in sustainable development: Economic, Social, and Environmental. This study aims, in a first stage, to analyse entrepreneurs' view of their role in local and regional development, by the adoption of sustainability strategies at the three identified levels. After that, it will also be explored the relation between sustainable development and other variables such as: business local integration, firm age, number of years in the actual location, or firm legal form.

As mentioned, the methodology adopted was the questionnaire, in order to get entrepreneurs opinion. In order to guarantee a valid sample, and considering the number of firms operating in this region, it was calculated the number of a valid sample, and due to the results obtained after a pilot study it was identified a valid sample of 44 questionnaires. However, due to the number of firms operating in the manufacturing and construction businesses (above 34.000) it was decided to collect some more questionnaires. At the end 314 questionnaires answered by managers from SMEs operating the in region of Lublin, acting the in the manufacturing and construction sectors, were accepted for this analysis.

As main results it was identified that the major concern of entrepreneurs is related to the economic perspective. The second most important perspective was the environmental and at last the social one. In general the results were very positive. Most of firms present a proactive attitude towards to sustainable development, arguing that they adopt sustainability strategies (Economic, Social, and Environmental) at their management policies and strategies. However it was noticed that while older firms (above 10 years old) present greater concern with social and environmental issues, younger firms, are focusing in the economic perspective.

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Another interesting finding is related to the level of local integration. Most of businesses done by the firms in this region occur in the region, i.e., 54.9% of total purchases are done in the region, while sales in the region assume a figure of 62.5%. This indicates the existence of a high level of local business integration. When comparing the relation between firms' sustainability strategies and local integration, it was identified the existence of a dependence, but the tendency identified was surprising. It was expected to find that those firms that are doing most of businesses (upward and forward) in the region, would be those that, in general present a higher concern to local sustainability, namely at social and environmental levels. However, locally acting firms do not present a sustainable strategy as other firms do. The result is also interesting, because it might mean, that firms that are operating behind regional frontiers, are promoting a more efficiently local development than local acting firms.

Key Words: SMEs; Sustainable Development; Local/Regional Development;
JEL Codes: M10, O14, O18, O44

1. Introduction

The important role of businesses in regional economic growth and development is widely accepted as it is possible to find along the state of art, as for instance in the studies based in the triple and quadruple helix model (Leydesdorff, 2000; Gouvea, Kassicieh, & Montoya, 2013) .

In economic terms the region is considered as a set of territorial units which, in terms of selected criteria, share many common features and have a number of distinctive characteristics as compared to the surrounding areas; the region is specialized and has a particular set of productive forces (Kuciński, 1990).

Today, it is a widely accepted notion that the development of regions is the driving force behind the economic growth of countries (Pietrzyk, 2001), and the recognition of this fact is reflected in various European Union's policies (Antonescu, 2014; Sîrbu, 2014). A major factor for this growth can be find in the entrepreneurial fabric, through its role played in generating added value, innovation and jobs (Muresan & Gogu, 2012).

Regional development embraces the processes of quantitative growth as well as qualitative progression. These processes are seen as changes occurring in many spheres, including the economy, technology, natural environment and in society (Duarte & Diniz, 2011). These changes have both economic and societal dimensions and in the long term they should lead to improving the quality of life of inhabitants, the setting-up of new enterprises "This work is supported by national funds provided by the FCT - the Portuguese Foundation for Science and Technology, through its project UID/SOC/04011/2013".

and the creation of new jobs, the upgrading of the regional economic infrastructure and therefore they contribute to an increase in gross domestic product per capita generated in the regional economy. The pace of these changes is contingent on the type of resources deployed in particular areas, their structure and a degree of concentration, as well as a current level of development.

Institutional development, restructuring of economic activity, technological development and innovation, mobility and migrations of people, development of human capital, development of services, improvement in the quality of life and natural environment, as well as the preservation and enrichment of cultural identity are claimed to be the major components of regional development (Bojar, Stachowicz 2011, Klasik 2002). Factors such as the market knowledge and experience, academic ground and internationalization are presented by Kisman & Tasar, (2014) as the key elements of local development.

However, some authors argue that other factors, such as the utilization of regional resources by external entities (exogeneity), involving external entities in the use of local resources (stimulating character), and involving local entities in the utilization of external resources (attracting character) also play an important role in regional development (Potoczek, Stępień, 2012; Coffey, Polèse, 1984). Other approaches to regional development increasingly emphasize that the development of regions should be based on its internal potential and should be determined and driven based on a bottom-up pattern (endogeneity) (Coffey, Polèse, 1984; Bergman, Maier, Todtling, 1991; Asheim 1995; Porter, 2000; Grosse, 2002; Bis, Žminda, 2014). Some authors also argue that to a large extent the regional and local development is shaped by entrepreneurship and enterprise development, in particular in the sector of small and medium-sized enterprises (SMEs) (Mrva & Stachová, 2014; Pike, Rodriguez-Pose, Tomaney, 2007). It is emphasized that SMEs play an increasingly vital role in ongoing processes of economic growth and development.

Rocha also highlights a particularly important role of SMEs in creating GDP and new jobs, mitigating poverty and disparities, and in improving the quality of life (Rocha, 2004). SMEs generate a sizeable income for the state budget and local communities, and therefore they contribute to the social and functional change of relevant areas, affect the innovativeness of economy (Onak-Szczepanik, 2006), and contribute to well-being of regions and their inhabitants.

Stawasz argues that SMEs demonstrate several distinctive traits, which determine their role in regional development, such as greater flexibility and the resultant adaptability to change, local character, and a high degree of creativity and innovativeness (Stawasz, 2001).

In assessing the impact of SMEs on the regional development Lachowicz points to the following phenomena: a direct influence of SMEs on the current situation on the labour market and the level of revenues of inhabitants; an influence on the development of the goods and services market, including closing existing market gaps; the role of SMEs in the growth and development of public institutions and big enterprises through cooperation; the role of SMEs in creating positive models for the development of local and regional entrepreneurship throughout the so-called multiplier effect; the role of the SME sector in increasing competitiveness and innovativeness; the participation of SMEs in the development of education, culture, sport and other fields through sponsoring and shaping social needs (Lachiewicz, 2012).

Strużycki, (2002) claims that SMEs due to their inherent specificity can even surpass large firms, in particular as regards the following aspects:

- responsiveness to shifting market requirements;
- business management as they have simple and less bureaucratized management structures;
- better ability to take advantage of emerging market opportunities;
- development of more efficient internal information exchange systems developed to ensure a better adaptability to change and fluctuations in external requirements;
- better use of expert knowledge of experienced specialists;
- ease in establishing cooperative relations thanks to their ability to mobilize and hire needed workforce in a quick and efficient way; and
- utilization of funds made available to support the development of the SME sector and local economies.

Numerous studies on the relationship between regional development and entrepreneurship highlight the feedback loop pattern, i.e., on the one hand developing and growing firms impact the development and growth of particular areas, on the other hand, the near and remote environment creates various conditions affecting the development and growth of economic entities (Łuczka, Przepióra, 2012). Among macro-regional factors, which in most situations have an independent character (or are shaped in a limited manner), usually are numbered economic conditions of the region, and its technological, legal and cultural

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conditions (Każmierski, 2012). The nearest environment, along with embedded factors such as suppliers, customers and competitors, as well as conditions on the local labour market and existing social and material infrastructure, is of the most vital importance to the development of SMEs.

Equally important are those components that can be shaped directly by local and regional authorities, such as various schemes stimulating entrepreneurship development, incentives for investors, and preferential terms offered for business start-ups (Każmierski, 2012). These facilities are of crucial importance to the regions and local communities characterized by a relatively low level of social and economic development. The Lublin Region located in eastern Poland is an example of such backward regions. In order to study the relation of SMEs in Lublin's development, we will next present the region, and the methodology adopted for this research.

2. Characteristics of the Lublin Region (Poland)

Lubelskie Voivodeship, which is located in eastern part of Poland, occupies an area of more than 2.5 million hectares, of which 70.4% is arable land (CSO, 2013a:). Despite the large area, it is one of the least populated and urbanized regions in Poland. Lubelskie Voivodeship is situated on the eastern EU border with Ukraine and Belarus.

In 2012, the total number of working population was 947,000, of which 50.5% worked in services, 27.7% in agriculture, forestry, hunting and fishery, while 21.5% in industry and building (CSO, 2013a and next; CSO, 2013b). As of the end of 2012, the rate of unemployment was running at a level of 14.2% (CSO, 2013b). In 2011, GDP in Lubelskie Voivodeship calculated in current prices amounted to 13,254.9 mln EUR¹, which accounted for 3.8% of Poland's GDP. GDP per capita was equal to 6,027 EUR, while Poland's GDP per capita in the same period equalled 8,980.5 EUR (CSO, 2013b). GDP per capita generated in Lubelskie Voivodeship amounted to only 42% of the EU average (CSO, 2013). All the main economic indicators show that Lubelskie Voivodeship is one of the least developed regions in Poland (Gajewski, 2012).

In 2012, in Lubelskie Voivodeship operated over 166,000 entrepreneurs, of which 76.2% were individual entrepreneurs (CSO, 2013b; US, 2013). Almost 77% of entrepreneurs operated in services, 20.5% in manufacturing and construction, while the remaining 2.6% in agriculture, forestry, hunting and fishing sectors (CSO, 2013b). In Lubelskie Voivodeship the

¹ Data expressed in PLN have been converted to EUR based on the average currency exchange rate of 31 December 2011.

number of businesses per 10,000 inhabitants was 766 which was markedly below the Poland's average of 1,031 business entities (US, 2013). Over 95% of all businesses registered in Lubelskie Voivodeship employed less than 9 persons (US, 2013). Most entrepreneurs (over 64%) conducted their business in cities (US, 2013). Previous business surveys show that most businesses are run locally and their activities are limited to local communities (*gminas* and *poviats*) (IBS, 2011).

In 2012, the total investment outlays amounted to 2,411.1 million EUR², of which 65.1% were made in the sector of services, 30.7% in manufacturing and building, while 4.3% in agriculture, forestry, hunting and fishery (CSO, 2013a and next; CSO, 2013b).

Overall, it is assessed that an investment attractiveness of Lubelskie Voivodeship is quite low. This is due to a lack of well-developed transportation infrastructure, which is seen as a major hurdle in running a business. It also makes the region less attractive for tourists and thus discourages potential tour operators to make investments (IBS, 2011).

3. Research assumptions and research methodology

3.1. Research assumptions:

The purpose of the study, carried out in 2013, in the manufacturing and construction sectors of Lublin was to establish how the entrepreneurs perceive their role in local and regional development. For this purpose, the following working hypotheses have been put forward:

- H1: Entrepreneurs operating in the Lublin Region in selected sectors of regional economy recognize their significant role in social and economic development of the region and local communities.
- H2: Entrepreneurs operating in the Lublin Region demonstrate positive attitudes towards sustainable development.
- H3: Among the three areas of sustainable development of the region, the economic aspect is dominant for entrepreneurs.

3.2. Sample calculation:

Since questioning the whole of the population was not possible due to time constraints, the

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study was focused on a valid sample. In order to find the minimum sample size it is necessary to define:

- Confidence level;
- Error margin;
- Proportion of answers obtained in a particular section.

Following the authors' suggestion was developed a pilot study with 35 observations in order to analyse the proportion of answers that occur relatively to the degree of sustainability. From this initial sample it is possible to do some inferences to the final sample, using the following formula:

$$(1) n = p\% * q\% * (z/e\%)^2$$

where: n : minimum sample size required;

$p\%$: proportion belonging to the specified category;

$q\%$: proportion not belonging to the specified category;

z : z value corresponding to the level of confidence required;

e : margin of error required;

In order to calculate the sustainability levels we first considered the three dimensions of sustainable development, as presented in Table 1

Table 1. Number of questions by each strategy

Test area	Economic Development	Social Development	Environmental Development
Number of questions	4 questions	5 questions	3 questions

Each dimension was evaluated according to the identified questions. Each question was answered on a likert-scale (1 to 5). For each dimension we summed the results of questions within that dimension, and the result was divided by the number of questions considered in each dimension.

In order to get the sustainability results, we calculated the average results for the three dimensions. The output was organized into 5 categories:

- Very weak
- Weak
- Moderate
- Positive
- Very positive

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According to the results from the pilot study the minimum result was a moderate approach. In order to calculate the minimum sample size it is necessary to have a yes or no approach. In other words, it is necessary to find a percentage for firms that take a sustainable behaviour versus non-sustainable. The results obtained were as follows:

Table 2. Sustainability results from the pilot study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Moderate	1	2.9	2.9	2.9
	Positive	27	77.1	77.1	80
	Very Positive	7	20	20	100
	Total	35	100	100	

Those results suggested the classification as sustainable behaviour firms with a positive and very positive result (97.1%) and non-sustainable firms with a moderate approach to sustainability (2.9%).

In terms of sample size results, those figures led to the following result:

$$n = 97.1\% * 2.9\% * \left(\frac{1.96}{5\%}\right)^2 = 43.27$$

That means that in order to get a valid sample it would be necessary to get 44 answers. Since this figure is too low, we decided to get more than the suggested answers, and we were able to get 314 answers.

4. An analysis of the research findings

4.1. Sustainable Development Strategies

The questionnaire on sustainable strategies was organized in the three main areas of sustainable development. The first question was a general approach to the role of firms on local development: “*Firms play an important role on local development*”. On a possible classification from 1 to 5 the average answers presented a value of 4.21, which means that interviewees, most of them with managerial responsibilities, believe that firms are important agents on local development. However, the results are slightly different when it comes to the role of small firms. In the scenario of indicating small firms as the most important players on local development the average result decreased to 3.88. It means that small firm managers understand that their larger incumbents have more responsibility on local development.

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After these brief considerations on the initial results we will present some results on sustainability strategies.

The questions were analysed in groups of variables, following the methodology by Hill & Hill (2002): latent variables. To analyse each dimension it was used a different number of questions as presented in Table 1. The economic dimension was measured through the questions:

1. Firms play a crucial role in local development;
2. Small firms are those who can contribute more for a region development;
3. Firm profits must be reinvested in firm businesses/assets;
4. Long-run success is more important than short-run performance.

Even recognizing the important role of firms on local development (4.21) interviewees did not recognize this importance on small firms since the average result for the second economic dimension question was 3.88. Considering the answers to question 3. and 5. (below) the average results were 4.01 for firms profit reinvestment and 3.43 for region profit reinvestment. These results also show that firm factors present higher values than regional ones. This might indicate the existence of a perfectly justifiable concern with the economic dimension.

By doing an analysis to the economic dimension was obtained an average result of 4.43 out of 5. The result demonstrates the attention that is being devoted to the economic dimension.

The social dimension was analysed through the questions:

5. Profits must be reinvested in the region;
6. Firms' employees must be recruited in the region;
7. Firm has mechanisms to prevent child labour (even in outsourced services);
8. Firm must support society (through sponsorship social and cultural actions) in a regular basis;
9. Firm promotes employees lifelong learning.

Analysing the questions as one variable, it is possible to get the results about the social dimension that is 3.89. As expected firms are defining their strategies more focused in the economic dimension.

The environmental dimension was analysed through the questions:

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- 10. Firm knows and tries to reduce environmental impacts;
- 11. If just a few firms break the environmental rules, the consequences are not significant (reversed analysis);
- 12. Firm is investing in the use of clean energies;

The average result was 3.95 that is a very good result, since it shows a concerning with the green dimension, even above the social one.

It is quite interesting to note that in a similar study carried out in a Portuguese region (Duarte & Diniz, 2014) the findings were similar. In that study the most important dimension identified was the environmental, followed by the social, and the economic dimension was the last one. This question opens new paths for further research. In order to test these results, a new questionnaire is being applied in Portugal in a wider region than the original one, and the same research is being carried in a Romanian region. The main idea is to compare the results in different periods of time, and in different regions.

Considering all dimensions the average result for sustainability presents a global result of 4.19 (see Table 3) which means that on average, firms present a positive, let's say, proactive attitude towards to sustainability. Considering individual results and forming classes where the lower means a weak approach to sustainable development and the highest a strong approach it was possible to verify that most of firms (91.3%) present a proactive attitude to sustainable development.

This figure even being lower than the results obtained in the pilot study, do not compromise the sample size validity, since the original sample size required was of 44 questionnaires with a percentage of 97.1% - 2.9%, but the number of valid questionnaires collected was 314, that assures validity even in a 50% - 50% situation.

Table 3. Sustainability results by dimension

		Economic Development	Social Development	Environmental Development	Sustainable Development
N	Valid	314	314	314	314
	Missing	0	0	0	0
Mean		4.4299	3.8949	3.949	4.1897

The research findings clearly indicate that entrepreneurs operating in the Lublin Region (manufacturing and construction sectors) recognize that their business activities play an important role in local and regional development. Their activities are conducive to sustainable

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development of areas where they carry out their business. What is important however is that entrepreneurs' activities focus mainly on economic development, and therefore they recognize their role in economic development and to a lesser degree perceive other aspects of their activity. This can be explained by a supposition that entrepreneurs attach importance first and foremost to tangible benefits that may result from their activity for their own enterprises, employees and a wider environment they operate in.

Moreover, in our view, the other element, which could materially have affected the findings, is the fact that in Poland child labour is banned, and one of the questions in our survey involved the exploitation of child labour. However, this question was kept, in order to identify firms' control on their labour (internal and external) workers. Moreover, in Poland the use of renewables in the power generation industry is still very poor and hence it could also to some degree flaw the research findings. However, even with this constraint, the results on the environmental perspective were positive.

4.2. Local Integration

Once we are discussing in this paper the sustainability strategies and somehow the relation: firm-region, it seems to be relevant to present some results on upstream and downstream relations.

Considering upstream relations, in the questionnaire it was asked to identify the location of firms' three main suppliers, according to the locations presented in Table 4.

Table 4. Location of the 3 main Suppliers

	Supplier 1	Supplier 2	Supplier 3
	%	%	%
No answer	-	3.2	9.6
In the same municipality	46.2	22.6	23.2
In other town in Lubelskie Voivodeship	24.2	34.7	19.7
In other municipality in eastern Poland	6.4	15.6	14.6
In other municipality in Poland	17.8	20.1	25.5
European Union	3.8	3.8	5.1
Somewhere else	1.6		2.2
Total	100.0	100.0	100.0

On what regards downstream relations the results are presented in Table 5.

Table 5. Location of the 3 main Customers

	Customer 1	Customer 2	Customer 3
	%	%	%
No answer		7.3	15.6
In the same municipality	62.1	23.6	17.8
In other town in Lubelskie Voivodeship	17.2	41.4	25.5
In other municipality in eastern Poland	4.8	8.6	14.6
In other municipality in Poland	8.6	13.4	19.7
European Union	5.7	4.8	4.5
Somewhere else	1.6	1.0	2.2
Total	100.0	100.0	100.0

From the previous Tables it is clear that most of the businesses are done in the region (in the same municipality or in Lubelskie Voivodeship). However in order to get a clearer vision of these relations it was built a table (Table 6) that presents the average results by location considering the 3 main stakeholders.

Table 6. Degree of local integration

Business Relations	Location	Upstream	Downstream
		%	%
Ultra-local	In the same municipality	30.7	34.5
Local	In other town in Lubelskie Voivodeship	26.2	28.0
Regional	In other municipality in eastern Poland	12.2	9.3
National	In other municipality in Poland	21.1	13.9
International	Outside Poland	5.5	6.6

Comparing up and downstream businesses it was possible to verify that firms are selling more in the region than buying. Since the target population were firms in industrial and construction sectors, the results are somehow expected. Firms' final products may be acquired in the region (B2B or B2C) easier than raw materials.

Considering the suppliers' location, it is possible to realize that 56.9% of the suppliers are located either in the same municipality or in Lubelskie Voivodeship. On what regards customers the figure raises to 62.5%. These figures mean that most of the businesses are done within a local area.

These findings are interesting from the local perspective, but at the same time present some concerns. Even exporting more (6.6%) than importing (5.5%), the exports level is too low. This result might indicate a high level of dependence on the internal (mainly local) market.

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4.3. Sustainable development vs. Local integration

Taking into consideration the results on sustainability strategies and local integration, we decided to go further to search for stronger relations between these variables.

In order to analyse a relation (variable association) between sustainable firms (sustainable behaviour) and local integration, we took two cross tabulations based on the following hypothesis:

H₀: The variables are independent (do not exist variable association) vs.

H₁: The variables are dependent (exist association)

In order to analyse these hypothesis, according to the literature we must run a χ^2 test. The decision will be taken according to the p value obtained with the χ^2 test.

In first place we created two new variables to classify firms as local actors on both upstream and downstream businesses. To do so, the new variables considered as local actor firms that were either buying or selling just for stakeholders (three main suppliers and customers) located in the same municipality or, at most, in another town in Lubelskie Voivodeship.

After getting these new variables each one of them were crossed with the Sustainable Development variable, in order to analyse variable (in)dependence.

On the cross tabulation result (sustainable development vs. upstream integration) it was verified that some observed results differ from the expected ones, which leads to the possibility of variables association. By requiring the χ^2 test we got a p-value of 0.001709. Since this result is lower than 0.01 it means that H₀ might be rejected with a confidence level of 99%, i.e., it might exist association between these variables.

By rejecting H₀ one could assume that those firms that are acting locally are the most sustainable ones. It makes sense because if those firms are embedded in the region they may act proactively, or at least they will reply to the social and environmental behaviour. However, deeper analyses on the results show the opposite. In order to assume variable independence it was expected to get a result of 29 local acting firms with a very good sustainable development level, but the results counted just for 16 firms. At the same time, the expected result on a very good level for not locally (acting) firms was 57 firms, while the results counted for 70. Since the χ^2 test allows the rejection of variables independence, we

may argue that firms that are acting not only in a local level (upstream perspective), present a more sustainable strategy than firms that are acting mainly in a local level.

On what regards downstream integration, by doing the same procedures the *p value* result was 0.010349. This result also allows to reject the null hypothesis, this time, with a 95% confidence level. However the conclusion is similar: locally acting firms do not present a sustainable strategy as other firms do.

The results from these tests led us to undertake another test. Is there a relation between a sustainable strategy and the competitors' location?

p value = 0.031 reject the null hypothesis with a 95% confidence level.

Firms that identify their main competitors as not local, present better levels of sustainability strategies. This local concern might be a strategy to strength their relation with local stakeholders creating like this entry barriers to external (not local) competitors.

In order to get some more information about the variable that might influence the sustainability strategies some more tests were performed.

In first place we tried to analyse the relation with firm legal form. The hypothesis is: "Is there any type of firm with characteristics pro or anti sustainability?" According to the results the χ^2 test result is not valid since an assumption was not met. However there are not evidences of dependence, since the counted results are close to the expected ones.

Other tested hypotheses were the relation with firm age and the numbers of years in the actual location. In order to test these hypotheses the both variables (age and years in last location) were organised into three classes: from 1 to 10 years; from 11 to 20; more than 20 years. At first it was analysed the variable "firm age". All the assumptions were met and from the results we may reject the null hypothesis of independence with a confidence level of 95% (*p value* = 0.047). According to the results (expected and counted) it is possible to say that older firms (> 10 years old) are more committed with the region adopting strategies aiming sustainability. It seems that focus mainly on economic results is a characteristic of relatively young businesses, while the recognition of other aspects, for example social and environmental, comes later in time as the business grows and matures.

On the other hand the test results from the variable "years in the last location" do not allow a rejection of the null hypothesis (*p value* = 0.266) leading to the conclusion of independence of variables.

The last results presented, allow us to conclude, that firms start to adopt a proactive sustainability strategy after their initial period (around 10 years). However, the location is not important, since the strategies do not change according to the location, but with firm age.

5. Summary/Further Research

Summarizing the obtained research findings it can be concluded that our tentatively adopted research hypotheses have been verified:

H1: *Entrepreneurs operating in the Lublin Region in selected sectors of regional economy recognize their significant role in social and economic development of the region and local communities.*

Indeed, however even assuming an important role of SMEs in local development, the entrepreneurs view assume that their larger incumbents assume a role that is above the SMEs one.

H2: *Entrepreneurs operating in the Lublin Region demonstrate positive attitudes towards sustainable development.*

According to the results 91.3% of firms present a proactive behaviour on sustainability strategies.

H3: *Among the three areas of sustainable development of the region, the economic aspect is dominant for entrepreneurs.*

Generally, it can be stated that since the activities of entrepreneurs focus on the economic aspects, they tend to perceive their role and importance for local communities through the economic prism. Also interesting to note is the importance given to the green dimension of sustainable development, that was classified as the second most important on firms' strategies.

Entrepreneurs carrying out their business in the Lublin region in the manufacturing and construction sectors recognize their important role in the social and economic development of the region.

Moreover, a detailed analysis allowed us to observe significant discrepancies between activities undertaken in line with the postulates of sustainable development by businesses operating locally and businesses which to a large extent use the resources and opportunities emerging at a regional, or even wider level.

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Once identified a concern about sustainability by firms operating in the region of Lublin, it was expected that by the very fact that they operate locally and provide goods and services to local communities, they would be more willing to use locally available resources, and to undertake activities concerning all aspects of sustainable development. In fact, it was verified an important level of local integration 56.9% (upstream), and 62,5% (downstream) business activities are performed in the same municipality or at least in the Lubelskie Voivodeship. However, the research findings suggested that firms that are acting outside regional borders, present a higher propensity to sustainable strategies adoption.

This type of development, termed "attracting", may stem from their willingness to meet the demand for certain goods and services which are not available on a certain area, and when certain resources are not available locally.

The "openness" to external resources also means that firms establish cooperation links with companies based in other regions, which operate nationally or internationally. By the same token they are also more open to a specific "learning" process, and therefore they tend to recognize also non-economic needs. As a result, these firms are more likely to undertake actions and efforts for the environment and local communities. Hence, the entrepreneurs' assessment of the role of SMEs in the local development seems to be more comprehensive and to a higher degree focused on sustainable development.

Based on research we have observed that the longer the firm exists, the more willing it is to pursue a proactive sustainable development strategy. However, this observation should not come as a surprise. It is quite obvious that in the initial stage of running a SME when it enters the market and strives to survive, its owner is focused on economic issues in order to retain a market share and make profit. This affects how entrepreneurs perceive their role in their environments. Along with the quantitative and qualitative development of the enterprise when its position on the market and financial standing becomes more stable, entrepreneurs start to see other opportunities for influencing the environment they operate in and thus they are more willing to undertake activities also in other fields. Hence strategies of enterprises operating longer than 10 years to a larger extent incorporate activities focused on the natural environment and society.

The research findings presented above indicate that both the lifetime of a SME, and a territorial range of its activity, play an important role in the context of adopting and pursuing by this enterprise an active sustainable development strategy.

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This allowed us to conclude that an effective and efficient sustainable development policy, apart from other factors, requires the inclusion of measures designed to support the development of entrepreneurship through a system of incentives to business start-ups, as well as supporting and strengthening the existing firms in order to encourage them to establish cooperation links with other entities, in particular the ones operating on a larger scale.

References:

- Antonescu, D., Regional Development Policy in Context of Europe 2020 Strategy. *Procedia Economics and Finance*, 15(14), 1091–1097. 2014. doi:10.1016/S2212-5671(14)00561-9
- Asheim B., *Industrial districts as "learning regions". A conditions for prosperity. Studies in technology innovation and economic policy*, University of Oslo, Oslo 1995.
- Barca F., McCann P., Rodriguez-Pose A., The case for regional development intervention: Place-based versus place-neutral approaches, *Journal of Regional Science*, VOL. 52, NO. 1, 2012, pp. 134–152.
- Bergman E.M., Maier G., Todtling F. (ed.), *Regions reconsidered: Economic networks, innovation, and local development in industrialized countries*. Mansell 1991.
- Bis J., Żminda T., Znaczenie inwestycji w rozwoju gospodarczym regionu słabo rozwiniętego (in:) Bojar E., Żminda T., Bis J (ed.) *Region i edukacja a procesy rozwojowe*, Politechnika Lubelska, Lublin 2014 <http://bc.pollub.pl/dlibra/docmetadata?id=7902>.
- Bojar E., Stachowicz J., *Towards entrepreneurial regional development – recommendations for strategic management of the Lublin region* (in:) Bojar E., *Eco-Management for sustainable regional development*, Wydawnictwo “Dom Organizatora”, Toruń 2011.
- Central Statistical Office 2013a, *Regions of Poland*, Warsaw.
- Central Statistical Office 2013b, *Statistical yearbook of the regions – Poland*, Warsaw.
- Coffey W.J., Polèse M., The concept of local development: a stages model of endogenous regional growth, *Papers in Regional Science*, Volume 55, Issue 1, pp. 1–12, January 1984.
- Duarte, N., & Diniz, F., The Role Of Firms And Entrepreneurship On Local Development In The Region Of Vale Do Sousa. *Romanian Journal of Regional Science*, 5(1), 54–69. 2011.
- Duarte, N., & Diniz, F., Sustainability Strategies in Family and Non-Family Businesses: The Case of Vale do Sousa in Innovativeness and entrepreneurship. In E. Bojar & K. Pylak (Eds.), *Management Good practices in the World* (pp. 91–101). Lublin University of Technology. 2014.
- Gajewski P., Poziom i dynamika rozwoju małej i średniej przedsiębiorczości w Polsce Wschodniej. Ekspertyza wykonana na zlecenie Ministerstwa Rozwoju Regionalnego na potrzeby aktualizacji Strategii rozwoju społeczno-gospodarczego Polski Wschodniej do roku 2020, Ministerstwo Rozwoju Regionalnego, Warszawa, 2012.
- Gouvea, R., Kassiech, S., & Montoya, M. J. R. (2013). Using the quadruple helix to design strategies for the green economy. *Technological Forecasting and Social Change*, 80(2), 221–230.

“This work is supported by national funds provided by the FCT - the Portuguese Foundation for Science and Technology, through its project UID/SOC/04011/2013”.

Grosse G.T., *Przegląd koncepcji teoretycznych rozwoju regionalnego*. Studia regionalne i lokalne, nr 1(8) 2002, Europejski Instytut Rozwoju Regionalnego i Lokalnego, Uniwersytet Warszawski, Warsaw 2002.

Hill M.M., Hill A., *Investigação por Questionário*, Lisboa: Edições Silabo. Lisboa, 2002.

Instytut Badań Strukturalnych, *Kierunki rozwoju przedsiębiorstw w województwie lubelskim*. Raport z badania ankietowego przedsiębiorstw, Warsaw, 2011.

Każmierski J., Region i uwarunkowania jego rozwoju oraz konkurencyjności (in:) A. Adamik (ed.), *Współpraca małych i średnich przedsiębiorstw w regionie*. Budowanie konkurencyjności firm i regionu, Difin, Warsaw, 2012.

Kisman, Z. A., & Tasar, I., The Key Elements of Local Development. *Procedia Economics and Finance*, 15(14), 1689–1696. 2014. doi:10.1016/S2212-5671(14)00642-X

Klasik A., *Strategie regionalne, formułowanie i wprowadzanie w życie*. Katowice Academy of Economics Press, 2002.

Kuciński K., *Podstawy teorii regionu ekonomicznego*, PWN Warsaw, 1990.

Lachiewicz S., Rola małych i średnich przedsiębiorstw w rozwoju regionów (in:) A. Adamik (ed.), *Współpraca małych i średnich przedsiębiorstw w regionie*. Budowanie konkurencyjności firm i regionu, Difin, Warsaw, 2012.

Leydesdorff, L., The triple helix: an evolutionary model of innovations. *Research Policy*. 2000.

Łuczka T., Przepióra P., Regional Determinants of Efficiency Growth of Small and Medium-Sized Enterprises. Evidence from Poland, *Journal of Entrepreneurship, Management and Innovation (JEMI)*, Volume 8, Issue 1, pp. 138-154, 2012.

Mrva, M., & Stachová, P., Regional Development and Support of SMEs – How University Project can Help. *Procedia - Social and Behavioral Sciences*, 110, 617–626. 2014. doi:10.1016/j.sbspro.2013.12.906

Muresan, M., & Gogu, E., SMEs' Public Involvement in the Regional Sustainable Development. *Procedia - Social and Behavioral Sciences*, 62, 253–257. 2012. doi:10.1016/j.sbspro.2012.09.040

Onak-Szczepanik Beata, *Miejsce i rola sektora małych i średnich przedsiębiorstw w gospodarce Polski*, (in:) Woźniak M.G. (ed.), *Nierówności społeczne a wzrost gospodarczy. Problemy globalizacji i regionalizacji*, zeszyt 9, Wydawnictwo Mitel, Rzeszów 2006

Pietrzyk I., *Polityka regionalna Unii Europejskiej i regiony w państwach członkowskich*, Polskie Wydawnictwo Naukowe, Warsaw 2001

Pike A., Rodriguez-Pose A., Tomaney J., What Kind of Local and Regional Development and for Whom? *Regional Studies*, Vol. 41.9, pp. 1253–1269. 2007.

Porter M.E., *Location, competition and economic development: local clusters in global economy*, *Economic development quarterly*, vol. 14 no 1., 2000.

Potoczek A., Stępień J., *Prawno-organizacyjne i społeczne uwarunkowania rozwoju lokalnego i regionalnego*, Wydawnictwo Toruńskiej Szkoły Wyższej, Toruń, 2012.

Rocha H.O., Entrepreneurship and Development: The Role of Clusters, *Small Business Economics* Volume 23, pp. 363–400. 2004.

“This work is supported by national funds provided by the FCT - the Portuguese Foundation for Science and Technology, through its project UID/SOC/04011/2013”.

Saunders M., Lewis P., Thornhill A., *Research Methods for Business Students*, Essex: Prentice Hall, Financial Times, 2003.

Sîrbu, R.-M., European Union Strategy and Foreign Direct Investments Impact on Romania's Regional Development. *Procedia - Social and Behavioral Sciences*, 124, 442–450. 2014. doi:10.1016/j.sbspro.2014.02.506.

Stawasz E., *Małe i średnie przedsiębiorstwa w rozwoju regionalnym*, (in:) Markowski T., Stawasz D. (ed.), *Ekonomiczne i środowiskowe aspekty zarządzania rozwojem miast i regionów*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2001.

Strużycki M. (ed.), *Zarządzanie małym i średnim przedsiębiorstwem. Uwarunkowania europejskie*, Difin, Warszawa 2002.

Statistical Office, *Zmiany strukturalne grup podmiotów gospodarki narodowej w rejestrze REGON w województwie lubelskim, 2012 r. Informacje i opracowania statystyczne*, Lublin, 2013.