Mariia Naumova
State Higher Education Establishment "Kyiv National Economic University named after Vadym Hetman", Ukraine

MODELING THE IMPACT OF SOCIAL ENTREPRENEURSHIP ON THE QUALITY OF LIFE OF POPULATION

The paper reflects on the relationship of social entrepreneurship and quality of life at the international level for 2009 and 2015. For modeling the impact of the SEA rate on the indicator of the quality of life of the population in 2009 and 2015, the analysis was carried out using simple linear regression models.

Based on statistical data on SEA rate and quality of life in the countries of the world for 2009 and 2015, three simple linear regression models were built for each year separately, describing the dependence between indicators of the quality of life and SEA rate. For the purposes of our analysis, we chose the Social progress index and the Legatum prosperity index as indicators of quality of life. These models can also be used for economic analysis, since according to econometric tests with a 95% confidence the models are adequate, all coefficients are significant, the models lacks of autocorrelation and White's heteroscedasticity.

The three models led to similar conclusions. SEA rate positively impacts on the quality of life of the population, with each additional percentage of SEA leading to improving the quality of life of the population by an average of 0.18 score.

Key words: social entrepreneurship (SE), social entrepreneurial activity (SEA), quality of life of population, the Social progress index, the Legatum prosperity index, simple linear regression model.

Problem statement. The topic of social entrepreneurship is gaining importance from a research point of view over the last two decades of the twentieth and early twenty-first century. At this historical moment, the preconditions – global, social, organizational and personal – are formed, which led to the emergence of social entrepreneurship as modern management practice and cause the need for its deep theoretical study and modern practical application.

Analysis of the socio-economic efficiency of social enterprises, as well as measuring their social impact on the quality of life of the population through a special toolkit is one of the most relevant problems both in theory and in practice.

Analysis of recent research and publications. During the last two decades the research of social entrepreneurship (SE) has been devoted primarily to the formation of theoretical positions. Practical approbation of the idea of social entrepreneurship is presented in the research of Ukrainian scientists – O. A. Grishnova & G. U. Mishchuk[1]. An empirical analysis of the relationship of SE with other factors at the international level using regression analysis are provided by the foreign scientists such as F. Sarracino & A. Gosset, S. Šajeva & E. Rybakovas, B. Hoogendoorn & C. Hartog. The existing absence of studies on impact assessment of SE on the quality of life at the international level using regression analysis is formed the relevance of this research.

The aim of the article is an impact assessment of social entrepreneurship on the quality of life of the population at the international level.

Key study findings. Social enterprises and SE are facing a number of challenges related to their better visibility, creating a more favorable legal and institutional environment for their operation, as well as providing better financial opportunities for their development. It is important to note that the possibilities for development of the social economy sector in the world are connected mostly with the introduction of a definition of social enterprise and clear legal regulation of the procedure for acquiring the status and functioning of social enterprises.

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[1] Грішнова, О.А., Міщук, Г.Ю. (2013). Соціальні інновації у трудовій сфері: сутність, види, особливості реалізації в Україні. *Демографія та соціальна економіка*, *2 (20)*, 167-178.

SE has been identified at European Union (EU) as a key instrument for regional cohesion and overcoming the problems of poverty and social exclusion. The activity of social enterprises can be defined as particularly important in helping the government policy on social inclusion of vulnerable groups of population. As part of its policy for promoting the social economy and social innovation, SE contributes to achieving the strategic goals set in 2020. But legally binding definition of social enterprise at EU level has not been introduced.

SE assumes a balance of economic, social and environmental objectives in resource-limited settings and is based on the principles of meeting the needs and improving the quality of life of the population.

D. Koponen claims that the conceptual perspectives of well-being, quality of life, and creation value, viewed together with the role of social entrepreneurship, give broad understanding about competitive advantage from a particular enterprise position to the whole socio-economic business systems perspective[1].

Moga Tano Jilenga emphasizes that social enterprises seek to add to economic development through the creation of jobs and entrepreneurial ventures, provides social services that support the economy by improving quality of life for the local workforce (e.g. health care for the poor, vocational job training for high school graduates, substance abuse counseling for ex-offenders etc.)[2].

Thake and Zadek believe that social entrepreneurs are driven by a desire for social justice. They seek a direct link between their actions and an improvement in the quality of life for the people with whom they work and those that they seek to serve[3].

Achieving a positive social impact on society is the main goal of a social enterprise and often constitutes a permanent and integral part of its activity.

It is important to distinguish between the result for society and the result for the enterprise, i.e. the management of an enterprise should prioritize the measurement of the impact on society, and not only evaluate the organization as such. Measurement is a continuous process that is the main component of the enterprise and is an important strategic tool for planning activity.

Measuring social impact with an assessment of indicators and results caused by certain activities of social enterprises is meaningful to assess their contribution to the creation of social values.

S. Šajeva & E. Rybakovas explored at the international level for 2009 the relationship between social entrepreneurial activities and subjective well-being is due to the fact that subjective well-being is highly dependent on social circumstances that, in turn, are positively influenced by social entrepreneurial activities. They validated a general hypothesis is that a higher level of social entrepreneurship in a certain country causes a higher level of subjective well-being[4].

F. Sarracino & A. Gosset provided a first assessment of the ability of social enterprises to meet their non-economic goals, are based on data on share of social enterprises and well-being available for Luxembourg measured for 2007-2010. They found that the activity of social enterprises has an effective and lasting positive correlation with people's well-being. In particular, the higher is the share of social enterprises on the total enterprises registered by city, the higher is the reported wellbeing. The results showed that social enterprises play an highly important social support function that benefits the whole of society without exceptions[5].

B. Hoogendoorn & C. Hartog explored institutional and cultural factors at the country level that may relate to the act of founding a social start-up rather than other types of start-ups using regression analysis. The results of their study confirmed the idea that different factors are indeed driving a country's diversity of social entrepreneurial activity. Their results point towards support for the institutional support perspective and they found that the share of social start-ups in all start-ups is positively associated with

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[1] Koponen, D. (2012). Conceptual framework for quality of life management: social entrepreneurship perspective. *Economics & Management, Vol. 17, 4,* 1372-1377, 1376.

[2] Moga, Tano Jilenga (2017). Social Enterprise and Economic Growth: A Theoretical Approach and Policy Recommendations. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7, (1), 41-49, 47.

[3] Thake, S., Zadek, S. (1997). *Practical people, noble causes: How to support community-based social entrepreneurs*. London: New Economics Foundation.

[4] Šajeva, S., Rybakovas, E. (2012). The Relationship Between Social Entrepreneurship and Subjective Well-being. <http://www.ebrf.fi/_file/43900/EBRF11_1025.pdf> (2017, March, 25).

[5] Sarracino, F., Gosset, A. (2015). Assessing the non-economic outcomes of social entrepreneurship in Luxembourg. Economie et Statistiques *Working papers du STATEC,* No° 75. <http://www.ess-europe.eu/sites/default/files/publications/files/working-paper-v03.pdf> (2017, March, 25).

favorable institutional circumstances, in particular the public sector expenditure and, to a lesser extent, regulatory quality[1].

One of the main obstacles to the deep study of the social, economic and ecological impact of SE on the quality of life of the population of different countries of the world is the lack of relevant, representative and comparable data on the structure of SE capacity internationally. A realistic quantitative assessment of SE is necessary in order to demonstrate at the scientific level the existence of SE model in practice, which differs from the model of commercial entrepreneurship that dominates in the world.

Comparative analysis of empirical indicators of SE development in the world taking into account various national conditions allows us to identify macro-trends and form general ideas about the specific characteristics of social enterprises in each country. Let us note, mainly scientific literature on the dynamics of SE development in a certain territory, focuses on the collection, systematization and analysis of microdata of a certain country or region, and not on a global comparison of the level of SE development for the relevant group of countries. Therefore, available assessments of socio-economic aspects of SE in research papers are currently fragmented.

To ensure the possibility of dynamic research and national comparisons of the state of SE in the world, it is necessary to develop a unified system of basic quantitative and qualitative indicators that would characterize all aspects of social entrepreneurship by economists and experts. The authorizing of data collection for the compilation of official statistical information should be the state statistics bodies.

For the first time, unique indicators of social entrepreneurial activity were calculated by the titanic work of researchers in the framework of the international research project Global Entrepreneurship Monitor (GEM) for 49 countries in 2009 (surveyed 150,000 respondents) and 58 countries in 2015 (167,793 respondents). At the same time, it becomes possible to characterize the level of SE in the context of two years of 2009 and 2015, as the propensity of the population of different countries to SE is caused by the current socio-economic, political and cultural conditions of existence.

GEM, as an alternative source of statistical information, is a project that arose in 1997, at the initiative of leading scientists from Great Britain, USA, Finland and Ireland. Institutionally the project is supported by two authoritative institutions in the field of entrepreneurship research – Babson College (USA) and London Business School (Great Britain). GEM in 2009 & 2015 included in the adult population survey a special section of social entrepreneurship issues to address the lack of empirical world data and is an important source of information for analyzing SE at the national and global levels at the moment, is thus the largest comparative study of social entrepreneurship in the world.

GEM in order to assess entrepreneurial activity with a social orientation developed an indicator of social entrepreneurial activity (SEA), calculated as the percentage of the adult population (18-64 age) who are social entrepreneurs, of the total number of adult population.

The average SEA rate in 2009 across all 49 GEM countries is 1.94%, but it ranges from 0.2% to 4.93%[2]. The average prevalence rate of broad social entrepreneurial activity among nascent entrepreneurs in the start-up phase – that is, individuals who are currently trying to start social entrepreneurial activity – across all 58 GEM economies is 3.2% in 2015, but ranges from 0.3% (South Korea) to 10.1% (Peru). By comparison, the rate of start-up commercial entrepreneurship averages 7.6% in the world, and ranges from 13.7% in Vietnam to a high of 22.2% in Peru[3]. The average value of the rate of established SE in 2009 (0.47%) lower than at the early stage, and in 2015 (3.7%) prevails over the values of the SEA at the early stage. So, we observe a positive trend towards an increase in the SEA indicator, and also in 2015. The percentage of established social enterprises has increased, which indicates the stability of their activity.

In world practice, it worked out a lot of the concepts of quality of life and methods of measurement. Depending on the choice of the position which should assess the quality of life, there are three main approaches:

- objective concepts that emphasize objective indicators of living conditions that do not depend on anyone's opinion;

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[1] Hoogendoorn, B., Hartog, C. (2011). *Prevalence and determinants of social entrepreneurship at the macro-level.* Scales Research Reports H201022, EIM Business and Policy Research. <http://onlinelibrary.wiley.com/doi/10.1111/jsbm.12301/full> (2017, March, 25).

[2] Bosma, N., Levie, J. (2010). *Global Entrepreneurship Monitor 2009 Global Report.* <www.gemconsortium.org/about.aspx?page=pub_gem_global_reports>

[3] Bosma, N., Schøtt, Th., Terjesen, S.A., Kew, P. (2016). *Global Entrepreneurship Monitor 2015 to 2016: Special Topic Report on Social Entrepreneurship.* <https://ssrn.com/abstract=2786949>

- subjective concepts, studying people's perceptions of their living conditions;
- the concept of combining objective and subjective quality of life factors.

For the purposes of our analysis, we chose the Social Progress Index and The Legatum Prosperity Index as indicators of quality of life.

There are many systems of indicators for assessing the standard of living of the population, one of which is the Social Progress Index, the combined indicator of the international research project "The Social Progress Imperative", measuring the achievements of the countries of the world in terms of social well-being and social progress, developed in 2013 with the participation of Michael Porter, chairman of this project, a professor at Harvard University. The index does not include indicators of the economic development of the countries of the world, but is intended for evaluation of public welfare in a given country. Since the project assesses achievements in the social sphere separately from economic indicators, this allows for a more in-depth study of the relationship between economic and social development. The index covers countries for which reliable indicators are available and is based on a combination of data from opinion polls (12%), assessments of experts in the sphere of development (25%) and statistical information of international organizations (61%). In determining the success of a country in the field of social progress, over 50 indicators are grouped into three main groups:

1) basic human needs – nutrition, access to basic medical care, housing, access to water, electricity and sanitation, the level of personal safety;

2) the basics of human well-being – access to basic knowledge and literacy level of the population, access to information and communication, the level of health, environmental sustainability;

3) opportunities for human development – the level of personal and civil liberties, ensuring human rights and opportunities to make decisions and realize their potential.

The index measures the achievements of each country on a scale from 0 (least degree of stability) to 100 (highest degree of stability) on the basis of the data obtained in the three above-mentioned basic categories.

As an alternative to the UN Human Development Index, the British analysis centre "The Legatum Institute" developed the The Legatum Prosperity Index (LPI) that is used to assess the level of development of countries and can serve as an indicator of the quality of life of the population, is based on 104 different variables analysed across 149 nations around the world. Source data includes Gallup World Poll, World Development Indicators, Freedom House, World Health Organisation and other. The 104 variables are grouped into 9 sub-indexes, which are averaged using equal weights. The 9 sub-indexes are[1]: economic quality, business environment, governance, education, health, safety & security, personal freedom, social capital, natural environment.

Special indicators of the index are calculated on the basis of statistical data and the results of surveys on the level of income, economic development and satisfaction with the living conditions of the population. The country on the basis of the values of the special indicators for each group of criteria is assigned a rank in the ranking, which is determined by calculating the weighted average of the values of the special indicators.

Based on statistical data on SEA and quality of life in the countries of the world for 2009 and 2015, three simple linear regression models are built for each year separately, describing the dependence between SEA and indicators of the quality of life that we selected for analysis.

For modeling the impact of the SEA rate on the indicator of the quality of life of the population in 2009 and 2015, the analysis was carried out using a simple linear regression model of the form:

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i, \ i = \overline{1, n},$$

where: y_i – endogenous variable – the indicator of the quality of life of the population, score; x_i – exogenous variable – SEA rate, as a percentage of social entrepreneurs from the total number of economically active population of working age, %; β_0, β_1 – regression coefficients, ε_i – error term, i – country number, n – number of countries.

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[1] *Global ranking. The Legatum Prosperity Index* (2015). Legatum Institute. <http://www.prosperity.com/data-explorer?country=USA,UKR,GBR&rankOrScore=1&val=PI&year=2015&type=line&flipXY=f> (2017, March, 23).

The first model was evaluated on the basis of 47 observations for which there were data for countries in 2015 using ordinary least squares (OLS) method:

$$y_i = 5,41 + 0,18x_i, \quad R^2 = 0,642, \quad DW = 1,78,$$

where: y_i – the social progress index; x_i – SEA rate, %; β_0, β_1 – regression coefficients, ε_i – error term, i – country number, n – number of countries.

According to econometric tests with 95% confidence, the model is adequate (pvalue = 0.002 <0.05), all coefficients are significant (pvalue (β_0) = 0.0348, pvalue (β_1) = 0.0203), the model lacks autocorrelation (Durbin-Watson statistics 1.95 is more for right theoretical limit 1.54), there is no heteroscedasticity according to the White criteria (pvalue = 0.9227> 0.05). Thus, this model can be applied for economic analysis. In accordance with the results of the first model, SEA rate positively impacts on the quality of life of the population. In particular, an increase SEA rate by 1% leads to improving the quality of life by 0.18 score.

We build a second model using the legatum prosperity index as the indicator of quality of life for 2009. The model was evaluated on the basis of 43 observations for which there were country data in 2009 using ordinary least squares method:

$$y_i = 12,77 + 0,13x_i, \quad R^2 = 0,633, \quad DW = 1,62,$$

where: y_i – the legatum prosperity index; x_i – SEA rate, %; β_0, β_1 – regression coefficients, ε_i – error term, i – country number, n – number of countries.

According to econometric tests with 95% confidence, the model is adequate (pvalue = 0.02 <0.05), all coefficients are significant (pvalue (β_0) = 0.0005, pvalue (β_1) = 0.0243), the model lacks autocorrelation (Durbin-Watson statistics 1.81 is more for right theoretical limit 1.53), there is no heteroscedasticity according to the White criteria (pvalue = 0.8599> 0.05).

The second model demonstrates that SEA rate also positively impacts on the quality of life of the population at the international level in 2009, an increase SEA rate by 1% leads to an improvement the quality of life by 0.13 score.

A similar model is constructed using the indicator of the Legatum prosperity index as a factor of quality of life for 2015. The model was evaluated on the basis of 50 observations for which there were data for countries in 2015 using ordinary least squares method:

$$y_i = 14,75 + 0,22x_i, \quad R^2 = 0,671, \quad DW = 1,95.$$

This model can also be used for economic analysis, since according to econometric tests with a 95% confidence the model is adequate, all coefficients are significant; the model lacks of autocorrelation and White's heteroscedasticity.

The third model presents such result: an increase SEA rate by 1% leads to improving the quality of life by 0.22 score.

Summing up, it can be noted that the three models led to similar conclusions. SEA rate positively affects on the quality of life of the population, with each additional percentage of SEA leading to improving the quality of life of the population by an average of 0.18 score.

Conclusions. Econometric analysis has confirmed that SE should be seen as one of the most innovative ways to achieve a better quality of life, and the social inclusion of people from vulnerable groups in society. It is necessary to adopt key legislative changes for establishing measures in national strategic and policy documents for the introduction of practical mechanisms for supporting social entrepreneurship in Ukraine, as well as the successful development of social enterprises that require the creation of sustainable partnerships between business, NGOs and the government sector, where each of these actors recognize their role in achieving socially significant objectives and is ready to invest.

Social entrepreneurs creates social values not through charity, but through economic activities that combine social, economic and ecological goals, providing support to socially vulnerable groups of society,

promoting social positive changes, meeting the social needs of the population. They optimally use available resources and apply innovative approaches for the development of the social economy.

The growing popularity on "SE" in the modern world does not exhaust the theoretical relevance of research, on the contrary, it creates a need for more research. The main argument for this is the need to systematize the growing number and variety of scientific developments.

References:

1. Grishnova, O.A, Mishchuk, G.U. (2013). Sotsialni innovatsii u trudovii sferi: sutnist, vydy, osoblyvosti realizatsii v Ukraini [Social innovations in labor sphere: content, types and peculiarities of implementation in Ukraine]. *Demohrafiia ta sotsialna ekonomika* [Demography and social economy], *no. 2 (20),* 167-178. [in Ukrainian].

2. Koponen, D. (2012). Conceptual framework for quality of life management: social entrepreneurship perspective. *Economics & Management*, Vol. 17, 4, 1372-1377, P. 1376. [in English].

3. Moga, Tano Jilenga (2017). Social Enterprise and Economic Growth: A Theoretical Approach and Policy Recommendations. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *7, (1),* 41-49, 47. [in English].

4. Thake, S., Zadek, S. (1997). *Practical people, noble causes: How to support community-based social entrepreneurs*. London: New Economics Foundation. [in English].

5. Šajeva, S., Rybakovas, E. (2012). The Relationship Between Social Entrepreneurship and Subjective Well-being. <http://www.ebrf.fi/_file/43900/EBRF11_1025.pdf> (2017, March, 25). [in English].

6. Sarracino, F., Gosset, A. (2015). Assessing the non-economic outcomes of social entrepreneurship in Luxembourg. Economie et Statistiques *Working papers du STATEC,* No. 75. <http://www.ess-europe.eu/sites/default/files/publications/files/working-paper-v03.pdf> (2017, March, 25). [in English].

7. Hoogendoorn, B., Hartog, C. (2011). *Prevalence and determinants of social entrepreneurship at the macro-level.* Scales Research Reports H201022, EIM Business and Policy Research. <http://onlinelibrary.wiley.com/doi/10.1111/jsbm.12301/full> (2017, March, 25). [in English].

8. Bosma, N., Levie, J. (2010). *Global Entrepreneurship Monitor 2009 Global Report.* <www.gemconsortium.org/about.aspx?page=pub_gem_global_reports> [in English].

9. Bosma, N., Schøtt, Th., Terjesen, S.A., Kew, P. (2016). *Global Entrepreneurship Monitor 2015 to 2016: Special Topic Report on Social Entrepreneurship.* <https://ssrn.com/abstract=2786949> [in English].

10. *Global ranking. The Legatum Prosperity Index.* (2015). Legatum Institute. <http://www.prosperity.com/data-explorer?country=USA,UKR,GBR&rankOrScore=1&val=PI&year=2015&type=line&flipXY=f> (2017, March, 23). [in English].