

Entrepreneurship and Its Effects on the Romanian Labour Market

Renata Nițu Antonie, Emőke-Szidónia Feder, Nicoleta Sîrghi, Camelia Hațegan

Abstract — In the conditions that, Romania has to assure the premises necessary to pass on the stage of innovation based competitiveness, must assert the most efficient capitalisation of the human capital in the economy, through the exploitation of the entrepreneurial spirit, of the creative and innovative qualities of the active population. In these circumstances, based on the research model of the entrepreneurial process, depending on the stage of economic development and on the competitive level of the country, the paper aims to identify, on one hand, the existing relations between the conditions of the entrepreneurial framework and entrepreneurship, and on other hand, the possible impacts of entrepreneurship upon the dynamics of the labour market. Through the research model we propose to identify the cause-effect relationship between entrepreneurship and labour market, with and without using time-lagged variables.

Keywords — competitiveness, economical development stages, entrepreneurship/ entrepreneurial behaviour, labour market.

I. INTRODUCTION

THE micro- and macroeconomic characteristics of an economy jointly determines its level of competitiveness [26]. In the present, Romania is in the situation of being ought to be oriented toward the efficiency enforcement through investments in higher education and continuous training, toward the capacity to obtain efficiency based on extant technologies, and in the same time, toward the assurance of the necessary premises to pass in a higher economical development stage, the one of innovation based competitiveness.

In these conditions, entrepreneurship appears as a competent factor to contribute, in increasing measures, to the consolidation of a knowledge based economy, in the

conditions of which on the labour market „flexicurity means strengthening the cohesion and fighting against poverty and exclusion” [6].

Operational, entrepreneurship may be considered as a process which highlight the “manifest ability and willingness of individuals, on their own, in teams, within and outside existing organizations, to: perceive and create new economic opportunities (new products, new production methods, new organizational schemes and new product-market combinations) and to introduce their ideas in the market, in the face of uncertainty and other obstacles, by making decisions on location, form and the use of resources and institutions” [32]. In the essence, entrepreneurship is a behavioural characteristic of active persons, accentuated during a certain phase of the development of their career or concerning a certain kind of their activities [14]. The entrepreneurial process implies the existence of general conditions of the national framework and of the business environment to ensure the increase of efficiency and innovation. Entrepreneurs are innovative, proactively oriented and calculated risk assuming individuals [14]. They create and develop economic activities, through the identification of new opportunities, in order to generate value, depending on the temporal and spatial context in which they act. The skills generating the entrepreneurial spirit exist, in a smaller or higher extant, at the level of every individual and it manifests in all the cases when necessary stimulants do exists. Also, the entrepreneurial activity does not manifest in a temporal and space void, being affected by the context in which the entrepreneurs act. Consequently, the entrepreneurial motivations and actions are influenced by the cultural and institutional factors, by the business environment and the macroeconomic conditions in which individuals found themselves, at a given moment in time. Within these conditions, entrepreneurship may be perceived as a factor for economic growth, social progress and occupation of the labour force.

The paper is organised as follows: section 2 includes the conceptual modes of the entrepreneurial process in Romania, previous empirical results regarding the impact of the entrepreneurial framework upon entrepreneurship and the effects of the entrepreneurship for the labour market; section 3 points out the data and the variables used, the econometric analysis and the main results obtained from the statistical estimations, and the last section the implications of the results and the conclusions of the undertook research.

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II. PROBLEM FORMULATION

In the present, Romania is in the situation in which must be oriented to enhance efficiency through investments in superior education and continuous training, to obtain benefits from the existing technologies and in the same time to assure the premises to pass to a higher development stage – to the innovation based competitiveness.

A. Literature Review

Global Entrepreneurship Monitor from 2000 pointed out the existing direct relationship between the economic development level of a country and the type of entrepreneurial activity. Also, the conditions of the entrepreneurial framework merged with the skills and the motivations of potential entrepreneurs influence the entrepreneurial process. The conducted empirical studies, regarding the existent relationship between the appearance of new born firms and the creation of new workplaces, identified a diversity of results, mainly because of the variety of approaches. Therefore, at country level, studies pointed out that the formation of new firms has positive impact upon the employment level of the workforce [4], [8], although there are less clear results [3], [5] or even reverse ones [7]. The lack of the clarity concerning the impact of the appearance of new born firms upon the increase of the employment rate may be attributed to the necessity of taking in consideration relatively long time series. There are samples of analysis using time-lagged variables, but the majority of the research activity neither use this lagging, or take in consideration short periods of time [2], [5], [17], [18], [19], [31].

Taking in consideration self-employment, as an unemployment reduction method, we must delimitate between necessity-based entrepreneurship and opportunity-based entrepreneurship [1]. The conducted empirical researches highlighted a direct relationship between entrepreneurship, as

opportunity, and the creation of new workplaces through the newly created firms. The self-employment associated with necessity, intensifies in recession periods and decreases starting with the economic growth phase [22], drawing negative effects on the survival of newly created firms. Consequently, the labour forces' self-employment, as a method to refute unemployment, has just temporary effects [23].

At regional level, studies identified that the formation of new firms has positive impact on the employment rate [2], but the magnitude of relations changes in time. Furthermore, can be ascertained a positive effect of the high rate of self-employment on the regional employment rate [13], [17].

B. The Entrepreneurial Process Model for Romania

The proposed conceptual model of the entrepreneurial process in Romania (Fig. 1.) in this paper, has as starting point the model proposed by the Global Entrepreneurship Monitor (GEM) from 2008, to which were bought some reappraisals [12], [30], [33], [35].

The reference GEM model highlights different economical development stages that can be covered by a country and sustains that the activity of large firm depends on the general conditions of the national framework, when the entrepreneurial activity varies based on the conditions of the entrepreneurial framework. The aim of this demarche constitutes to assure the data necessary to globally evaluate the role of entrepreneurship in the countries' economic growth. Hence, as from a part of the specific elaboration principles for the reference GEM model, the proposed conceptual model of the entrepreneurial process for Romania considers only the entrepreneurial behaviour of individuals in the moment of new firm creation and administration of a business.

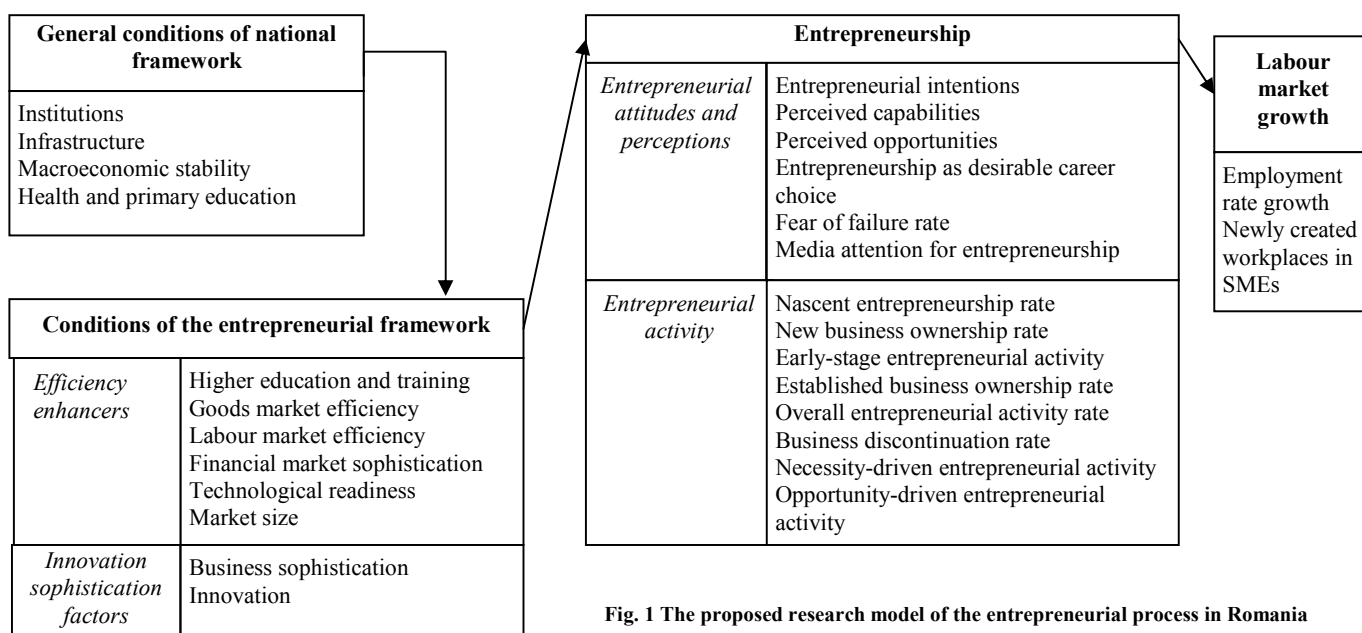


Fig. 1 The proposed research model of the entrepreneurial process in Romania

The proposed model is not a time-lagged one, which required the operationalisation of the entrepreneurial behaviour will not be realised by considering entrepreneurial aspirations. Moreover, because of the lack relevant statistical data for Romania, in the model has been made abstraction of the entrepreneurial behaviour manifested in large firms on national and international level (intrapreneurship), which belong to the externalising strategies practice of these firms. Consequently, the model refers exclusively to the “schumpeterian entrepreneurs” and to the owner-managers of the small- and medium sized firms [32]. The first are individuals, who allocate resources in order to start a new business owned by the, being motivated of opportunity exploitation from the business environment and of the

synonymy the terms entrepreneurship and entrepreneurial behaviour.

The identification of the simultaneous effects of entrepreneurship upon the labour market compels the elaboration of the research model without considering time-lagged variables and also its operationalisation through entrepreneurial perceptions and attitudes, respectively entrepreneurial activity [25]. As a continuation of the research, the identification of the time-lagged effects of entrepreneurship upon the labour market, conduced to the transformation of the research model in a decaled one, and implicitly, the operationalisation of the entrepreneurial behaviour will consider the entrepreneurial aspirations too (Fig. 2).

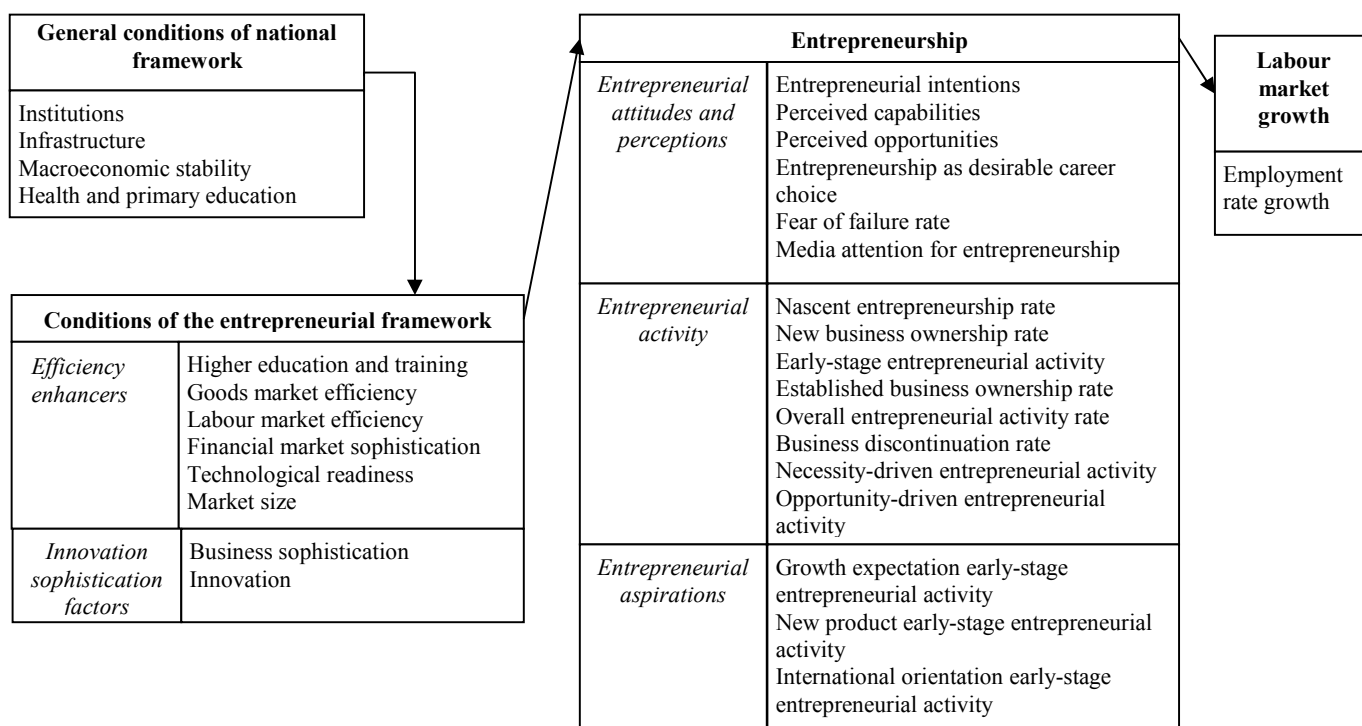


Fig. 2 The time-lagged research model of the entrepreneurial process in Romania

necessity of self-employment (nascent entrepreneurs). In this category are also included those entrepreneurs who motivated by the necessity of self-employment, in the sense that even if they aim to exploit opportunities, consciously or not, may take in consideration, concomitantly but not exclusively, also the self-employment. After achieving the proposed objectives, frequently nascent entrepreneurs became owner-managers of firms, who possess and administrates new firms, active for a period between 3 and 42 months, or consecrated firms, active over 42 months [23]. Must be mentioned the fact that, a part of the nascent entrepreneurs fail to start the business, exiting the entrepreneurial sector, but realising effects in the economy, through the pressure exercised upon the existent firms. Considering the referred operational definition of the entrepreneurship, in the proposed model there was considered

Starting with the major economic development stages aspiring to being transited by countries, factor driven economies, efficiency driven economies, innovation driven economies [27], the conditions of the entrepreneurial framework appears only in the last two stages of development. But the presence of an adequate infrastructure, of a level of primary education and a good health status, as the essential conditions of a factor driven economy, constitutes a starting point for the actual stage of economical development and the competitiveness of Romania [21]. In this country, the conditions of the entrepreneurial framework depend of the increasing efficiency and innovation, reflecting the major characteristics of the economy and society [20], [27].

C. Research Hypotheses

Depending on the national context, the foundation for the used statistical indicators aimed a correct understanding of the entrepreneurship, of the entrepreneurial behaviour influencing factors and the direct impact of this behaviour upon the labour market. In this sense, there were used 12 pillar indicators, grouped as follows:

- indicators defining the general conditions of the national framework measuring the different aspects of the basic conditions necessary for the country to pass to the next economical development stage and competitiveness, respectively institutions, infrastructure, macroeconomic stability, health and primary education;

- indicators referring to the conditions of the entrepreneurial framework, depending on the economical development stage and competitiveness of the country, for measuring diverse aspects of the stimulating conditions and characteristics, sustaining or stopping the entrepreneurial process, respectively efficiency enhancers (higher education and training, goods market efficiency, labour market efficiency, financial market sophistication, technological readiness, market size) and innovation sophistication factors (business sophistication, innovation);

- indicators for entrepreneurship, measuring the entrepreneurial activity dynamics at national level through taking in consideration the determinants of the entrepreneurial behaviour, respectively the entrepreneurial perceptions and attitudes (entrepreneurial intention, entrepreneurship as desirable career choice, fear of failure rate, media attention for entrepreneurship, perceived necessary capabilities, perceived opportunities), entrepreneurial activity (nascent entrepreneurship rate, new business ownership rate, established business ownership rate, total early-stage entrepreneurial activity, improvement-driven opportunity entrepreneurial activity, necessity-driven entrepreneurial activity) and entrepreneurial aspirations (growth expectation early-stage entrepreneurial activity, new product early-stage entrepreneurial activity, international orientation (new market) early-stage entrepreneurial activity);

- indicators referring to the impact of entrepreneurship on the dynamics of the labour market, measuring the direct effects of the entrepreneurial behaviour upon the workplaces, the national employment rate, respectively the employment rate and the number of newly created workplaces (as an annual increase of the employed people weighted by the percentage of staff employed in active SMEs).

Depending the economic development stage and the competitiveness of Romania, the propose entrepreneurial process model aims to highlight, the direct cause-effect relation, on one hand between the general conditions of the national framework, respectively of the entrepreneurial framework on entrepreneurship, on the other hand between entrepreneurship and labour market. In this sense, the proposed research hypotheses are as follows:

(i) There is a positive relationship between the general

conditions of the national framework and entrepreneurship;

(ii) There is a positive relationship between the entrepreneurial framework and entrepreneurship;

(iii) There is a positive relationship between the efficiency enhancing factors of the entrepreneurial framework and entrepreneurship;

(iv) There is a positive relationship between the innovation sophistication factors of the entrepreneurial framework and entrepreneurship;

(v) There is a positive relationship between entrepreneurship and labour market growth;

(vi) There is a positive relationship between the entrepreneurial perceptions and attitudes and labour market growth;

(vii) There is a positive relationship between entrepreneurial activity and labour market growth.

III. PROBLEM SOLUTION

A. Model Operationalisation and Data Collection

Data used in the statistical analysis are of external secondary data type, collected for the 2007-2009 time period, thanks to the methodological modification for data inclusion and treatment regarding the national competitiveness starting from 2007, alike the inexistence of entrepreneurship data before year 2007, respectively data about labour market was partly available for the 2006-2014 time period. Descriptions regarding the general conditions of the national framework and entrepreneurial framework have as data source the Global Competitiveness Report. Data regarding the national characteristics of the entrepreneurship is derived from the national and global reports, Global Entrepreneurship Monitor, Country Report for Romania and Global Report, all based on regular inquiries. From the Global Entrepreneurship Monitor there were derived data referring the entrepreneurial perceptions and attitudes, respectively the entrepreneurial activity. Data about labour market for Romania were obtained for Employment rate (15 to 64 years – annual average) by querying the European Unions' data base, Population and Social Conditions section between 2006 and 2009, respectively the Medium-range 2010-2014 Prognosis of the National Forecast Commission; while data for the weight of staff in active SMEs were obtained from the National Institute of Statistics, section Enterprise Activity for 2006-2009.

In the conducted exploration a simultaneous equation model was applied. For operationalisation, the proposed research model includes independent and effect variables, while the statistical analysis was realised in two steps. In the first stage, correlations were made between the general conditions of the national framework and of the entrepreneurial framework (independent variable) and entrepreneurship (dependent variable). In the second stage, there were pursued the existence of correlations between entrepreneurship (independent variable) and labour market (dependent variable).

B. Econometrical Estimations and Results

The data processing and analysis was realised with Microsoft Excel, Data analysis tools. The measuring scales are defined in the World Economic Forum and GEM Consortium methodologies, assuring the internal validity and not being necessary the study of their reliability.

1) Correlations

In conformity with the correlation matrix (Table I.) of the main variables and considering the sign of the correlations, for Romania within the 2007-2009 time period, there can be observed:

- a positive and moderately significant influence of the general conditions of the national framework on the entrepreneurial framework (0.648), respectively of the entrepreneurial framework on entrepreneurship (0.628);
- a negative significant correlation between the conditions of the entrepreneurial framework and of the entrepreneurship with the labour market (-0.727, -0.991).

Retesting the above mentioned correlations within the model using the time-lagged variables, for the 2007-2014 time period the correlation matrix indicated:

- a negative and acceptable association between the general conditions of the national framework and entrepreneurship (-0.296);
- a moderately good (0.534) correlation between the entrepreneurial framework and entrepreneurship.

TABLE I.
CORRELATION MATRIX OF THE MAIN VARIABLES FOR THE ENTREPRENEURIAL PROCESS MODEL IN ROMANIA

	General conditions of the national framework	Conditions of the entrepreneurial framework	Entrepreneurship	Labour market
General conditions of the national framework	1			
Conditions of the entrepreneurial framework	0.648378829	1		
Entrepreneurship	-0.185231538	0.628042981	1	
Labour market (not time-lagged)	0.050912493	-0.727319944	-0.990851066	1
Entrepreneurship (incl. aspirations)	-0.296408139	0.534920520	1	
Employment rate growth (1 year lag)	-0.611091561	-0.998847539	-0.574855786	1
Employment rate growth (2 year lag)	-0.296402576	0.534925442	0.999999999	1
Employment rate growth (3 year lag)	0.744055269	0.991079909	0.417549721	1
Employment rate growth (4 year lag)	0.832437815	0.961595351	0.282475805	1
Employment rate growth (5 year lag)	-0.377473438	-0.949741670	-0.772520122	1

By comparing the correlation matrixes of the time-lagged models, the general conditions of the entrepreneurial framework correlate with the growth of the employment rate, negatively at an acceptable level for the 1, 2 and 5 year time-lagged models, respective positively and moderately good for

the 3 and 4 year time-lagged representations. The conditions of the entrepreneurial framework correlate highly with the employment rate growth for the 1, 3, 4 and 5 year time-lagged models. The correlations highlight a significant diversity for entrepreneurship and employment rate growth, a good association for the 2 year and 5 year-lagged models, a moderately good one for the 1 year-lagged variant and an acceptable association for the 3 year and 4 year time-lagged ones.

2) Hypotheses Testing and Results

In order to test the validity of the research hypotheses simple linear regressions were imposed and made in two steps, by taking in consideration the significance level (p), the unstandardized value of the regression coefficient (β), calculated value of a t test (t). It is considered that a hypothesis is valid only if $p < 0.05$, β has high or relatively high values and t exceeds the critical value of the Student repartition, in our case 4.302 for a degree of freedom of 2, because of three year data availability.

TABLE II.
RESULTS FOR THE RESEARCH HYPOTHESES TESTING THROUGH THE ENTREPRENEURIAL PROCESS MODEL FOR ROMANIA WITHOUT TIME-LAG

Hypotheses	R	R ²	β	t	p	Results
(i) general conditions of the national framework → entrepreneurship	0.9968	0.9937	0.0243	17.9031	0.0031	validated
(ii) conditions of entrepreneurial framework → entrepreneurship	0.9998	0.9996	0.9816	78.0547	0.00016	validated
(iii) the efficiency enhancing factors of the entrepreneurial framework → entrepreneurship	0.998	0.9961	0.0241	22.802	0.0019	validated
(iv) innovation sophistication factors of the entrepreneurial framework → entrepreneurship	0.9959	0.9919	0.0284	15.7269	0.004	validated
(v) entrepreneurship → labour market growth	0.4899	0.24	0.0746	0.7947	0.51	not validated
(vi) entrepreneurial perceptions and attitudes → labour market growth	0.5265	0.2762	0.0245	0.8737	0.4743	not validated
(vii) entrepreneurial activity → labour market growth	0.4526	0.2048	0.2235	0.7179	0.5473	not validated

R – multiple R; R² – R square; p – significance level, β – the unstandardized value of the regression coefficient, t – calculated value for Student test

From data analysis we can conclude that: (i) a positive relationship exists between the general conditions of the national framework (independent variable) and entrepreneurship (dependent variable), because $p < 0.05$ ($p=0.003$), β has a high value ($\beta=0.024$), and $t > 4.302$ ($t=17.901$); (ii) a positive relationship between the entrepreneurial framework (independent variable) and entrepreneurship (dependent variable), since $p < 0.05$ ($p=0.00016$), β has a high value ($\beta=0.981$) and $t > 4.302$ ($t=78.054$); (iii) a positive relationship between the efficiency

enhancing factors of the entrepreneurial framework (independent variable) and entrepreneurship (dependent variable), in the conditions of $p < 0.05$ ($p = 0.0019$), β has a high value ($\beta = 0.024$) and $t > 4.302$ ($t = 22.802$); (iv) a positive relationship between the innovation sophistication factors of the entrepreneurial framework (independent variable) and entrepreneurship (dependent variable), for the reason that $p < 0.05$ ($p = 0.004$), β has a high value ($\beta = 0.028$) and $t > 4.302$ ($t = 15.726$).

In all the mentioned cases, a significant and influential ($R > 0.9$) relation can be detected between the independent and dependent variables ($R_1 = 0.996$, $R_2 = 0.999$, $R_3 = 0.998$, $R_4 = 0.995$), while in over the 99% of the dependent variable variation ($R^2 > 0.99$) owes to the cumulated influence of the independent variables variation ($R_1^2 = 0.993$, $R_2^2 = 0.999$, $R_3^2 = 0.996$, $R_4^2 = 0.991$).

In addition from the analysis can be pointed out as a results: (v) a negative relationship between entrepreneurship (independent variable) and labour market growth (dependent variable), because even if β has a high value ($\beta = 0.074$), $p > 0.05$ ($p = 0.51$) and $t < 4.302$ ($t = 0.794$); (vi) there is no positive relationship between the entrepreneurial perceptions and attitudes (independent variable) and labour market growth (dependent variable), for the reason that even if β is relatively high ($\beta = 0.024$), $p > 0.05$ ($p = 0.474$) and $t < 4.302$ ($t = 0.873$); (vii) there is no positive relationship between entrepreneurial activity (independent variable) and labour market growth (dependent variable), as is fairly high ($\beta = 0.223$), but $p > 0.05$ ($p = 0.547$) and $t < 4.302$ ($t = 0.717$).

In the cases of (v)-(vii) hypotheses, between an acceptable ($R > 0.25$) and moderately good ($R > 0.5$) association can be noticed between the independent and dependent variables ($R_5 = 0.489$, $R_6 = 0.526$, $R_7 = 0.452$), even as over 20% from the variation of the dependent variable ($R^2 > 0.22$) owes to the cumulated influence of the independent variables ($R_5^2 = 0.24$, $R_6^2 = 0.276$, $R_7^2 = 0.204$). In these cases, there are an important number of other factors with direct effect acting upon the labour market. Consequently, hypotheses (i) – (iv) have been validated, whereas hypotheses (v) – (vii) were not validated.

Continuing the research for the entrepreneurial process by using time-lagged variables, the effects of entrepreneurial behaviour at national level upon the labour market have been strictly measured by the relative growth of the employment rate, sustained by the inexistence of forecasts necessary to estimate the newly created workplaces within SMEs. As showed before, the operationalisation of entrepreneurship imposed to take in consideration the entrepreneurial aspirations, besides the entrepreneurial perceptions, attitudes and activities (Fig. 2). In these conditions, we tested the (v)-(vii) hypotheses on the time-lagged models, those which are preoccupied by the effect manifested in time of the entrepreneurship, overall and for each of its component factor by itself, upon the employment rate growth in Romania. Consequently, the testing process was realised for a 1-5 year time-lag, while in the same time we added a new hypothesis,

namely that:

(viii) There is a positive relationship between entrepreneurial aspiration and employment rate growth.

TABLE III.

RESULTS FOR THE RESEARCH HYPOTHESES TESTING IN ORDER TO IDENTIFY THE 1 YEAR-LAGGED EFFECTS OF ENTREPRENEURSHIP UPON THE ROMANIAN LABOUR MARKET

Hypotheses	R	R ²	β	t	p	Results
(v) entrepreneurship → employment rate growth	0.6438	0.4145	-0.0276	-1.1901	0.3561	not validated
(vi) entrepreneurial perceptions and attitudes → employment rate growth	0.6423	0.4126	-0.0144	-1.1852	0.3576	not validated
(vii) entrepreneurial activity → employment rate growth	0.6679	0.4460	-0.1589	-1.2691	0.3320	not validated
(viii) entrepreneurial aspirations → employment rate growth	0.6202	0.3846	-0.0090	-1.1181	0.3797	not validated

For the next variant of the research model, we considered the independent variables (entrepreneurship and its components) measured between 2007 and 2009, manifesting their effects upon the dependent variable (employment rate growth) for the 2008-2010 time period.

The obtained results showed (Table III.): (v) a negative relationship between entrepreneurship and employment rate growth, because β has a negative value ($\beta = -0.027$), $p > 0.05$ ($p = 0.356$) and $t < 4.302$ ($t = -1.1852$); (vi) there is no positive relationship between the entrepreneurial perceptions and attitudes, respectively employment rate growth, for the reason that β is negative ($\beta = -0.014$), $p > 0.05$ ($p = 0.357$) and $t < 4.302$ ($t = -1.185$); (vii) there is no positive relationship between entrepreneurial activity and employment rate growth, as β is fairly low ($\beta = -0.158$), $p > 0.05$ ($p = 0.332$) and $t < 4.302$ ($t = -1.269$); (viii) there is no positive relationship between entrepreneurial aspirations and employment rate growth, as β is insignificant ($\beta = -0.009$), but $p > 0.05$ ($p = 0.379$) and $t < 4.302$ ($t = -1.118$).

In the cases of (v)-(viii) hypotheses, a moderately good ($R > 0.5$) association can be noticed between the independent and dependent variables ($R_5 = 0.643$, $R_6 = 0.642$, $R_7 = 0.667$, $R_8 = 0.620$), even as over 40% from the variation of the dependent variable ($R^2 > 0.38$) owes to the cumulated influence of the independent variables ($R_5^2 = 0.414$, $R_6^2 = 0.412$, $R_7^2 = 0.446$, $R_8^2 = 0.384$).

Consequently, hypotheses (v) – (viii) were not validated for this variant of the model, which aimed to identify the 1 year-lagged effects of entrepreneurship upon the labour market.

The results from the subsequent analysis, for which we considered as independent variables (entrepreneurship and its components) measured between 2007 and 2009, manifesting their effects upon the dependent variable (employment rate growth) for the 2009-2011 time period, highlighted in Table IV.

TABLE IV.

RESULTS FOR THE RESEARCH HYPOTHESES TESTING IN ORDER TO IDENTIFY THE 2 YEAR-LAGGED EFFECTS OF ENTREPRENEURSHIP UPON THE ROMANIAN LABOUR MARKET

Hypotheses	R	R ²	β	t	p	Results
(v) entrepreneurship → employment rate growth	0.1792	0.0321	-0.0096	-0.2576	0.8207	not validated
(vi) entrepreneurial perceptions and attitudes → employment rate growth	0.2094	0.0438	-0.0059	-0.3028	0.7905	not validated
(vii) entrepreneurial activity → employment rate growth	0.1201	0.0144	-0.0360	-0.1711	0.8798	not validated
(viii) entrepreneurial aspirations → employment rate growth	0.2070	0.0428	-0.0038	-0.2992	0.7929	not validated

In conformity with the above mentioned, there is (v) a negative relationship between entrepreneurship and employment rate growth, because β has a negative value ($\beta = -0.009$), $p > 0.05$ ($p = 0.82$) and $t < 4.302$ ($t = -0.257$); (vi) there is no positive relationship between the entrepreneurial perceptions and attitudes, respectively employment rate growth, for the reason that β is negative ($\beta = -0.005$), $p > 0.05$ ($p = 0.79$) and $t < 4.302$ ($t = -0.302$); (vii) there is no positive relationship between entrepreneurial activity and employment rate growth, as β is fairly low ($\beta = -0.036$), $p > 0.05$ ($p = 0.879$) and $t < 4.302$ ($t = -0.171$); (viii) there is no positive relationship between entrepreneurial aspirations and employment rate growth, as β is insignificant ($\beta = -0.003$), but $p > 0.05$ ($p = 0.792$) and $t < 4.302$ ($t = -0.299$).

In the cases of (v)-(viii) hypotheses, a moderately low ($R < 0.25$) association can be noticed between the independent and dependent variables ($R_5 = 0.179$, $R_6 = 0.209$, $R_7 = 0.120$, $R_8 = 0.207$), and in average just around 3% from the variation of the dependent variable ($R^2 > 0.14$) owes to the cumulated influence of the independent variables ($R_5^2 = 0.032$, $R_6^2 = 0.043$, $R_7^2 = 0.014$, $R_8^2 = 0.042$).

Consequently, hypotheses (v) – (viii) were not validated for this variant of the model, which aimed to identify the 2 year-lagged effects of entrepreneurship upon the labour market.

TABLE V.

RESULTS FOR THE RESEARCH HYPOTHESES TESTING IN ORDER TO IDENTIFY THE 3 YEAR-LAGGED EFFECTS OF ENTREPRENEURSHIP UPON THE ROMANIAN LABOUR MARKET

Hypotheses	R	R ²	β	t	p	Results
(v) entrepreneurship → employment rate growth	0.3928	0.1543	0.0248	0.6042	0.6071	not validated
(vi) entrepreneurial perceptions and attitudes → employment rate growth	0.3966	0.1573	0.0132	0.6110	0.6033	not validated
(vii) entrepreneurial activity → employment rate growth	0.4145	0.1718	0.1458	0.6443	0.5854	not validated
(viii) entrepreneurial aspirations → employment rate growth	0.3671	0.1347	0.0079	0.5582	0.6328	not validated

For the next research model considering as independent variables (entrepreneurship and its components) measured between 2007 and 2009, manifesting their effects upon the dependent variable (employment rate growth) for 2010-2012, highlighted (Table V.): (v) a negative relationship between entrepreneurship and employment rate growth, because β has a high value ($\beta = 0.024$), $p > 0.05$ ($p = 0.607$) and $t < 4.302$ ($t = 0.604$); (vi) there is no positive relationship between the entrepreneurial perceptions and attitudes, respectively employment rate growth, for the reason that β is high ($\beta = 0.013$), $p > 0.05$ ($p = 0.603$) and $t < 4.302$ ($t = 0.611$); (vii) there is no positive relationship between entrepreneurial activity and employment rate growth, as β is fairly high value ($\beta = 0.145$), $p > 0.05$ ($p = 0.585$) and $t < 4.302$ ($t = 0.644$); (viii) there is no positive relationship between entrepreneurial aspirations and employment rate growth, as β is low ($\beta = 0.007$), $p > 0.05$ ($p = 0.632$) and $t < 4.302$ ($t = 0.558$).

In the cases of (v)-(viii) hypotheses, an acceptable level of association ($R > 0.25$) can be noticed between the independent and dependent variables ($R_5 = 0.392$, $R_6 = 0.396$, $R_7 = 0.414$, $R_8 = 0.367$), while in average just around 15% from the variation of the dependent variable ($R^2 > 13.4\%$) owes to the cumulated influence of the independent variables ($R_5^2 = 0.154$, $R_6^2 = 0.157$, $R_7^2 = 0.171$, $R_8^2 = 0.134$).

Consequently, hypotheses (v) – (viii) were not validated for this variant of the model, which aimed to identify the 3 year-lagged effects of entrepreneurship upon the labour market.

TABLE VI.

RESULTS FOR THE RESEARCH HYPOTHESES TESTING IN ORDER TO IDENTIFY THE 4 YEAR-LAGGED EFFECTS OF ENTREPRENEURSHIP UPON THE ROMANIAN LABOUR MARKET

Hypotheses	R	R ²	β	t	p	Results
(v) entrepreneurship → employment rate growth	0.9971	0.9943	0.0661	18.7542	0.0028	validated
(vi) entrepreneurial perceptions and attitudes → employment rate growth	0.9989	0.9979	0.0348	31.4031	0.0010	validated
(vii) entrepreneurial activity → employment rate growth	0.9928	0.9856	0.3657	11.7256	0.0071	validated
(viii) entrepreneurial aspirations → employment rate growth	0.9967	0.9935	0.0225	17.5187	0.0032	validated

The obtained results from the analysis for which we considered as independent variables (entrepreneurship and its components) measured between 2007 and 2009, manifesting their effects upon the dependent variable (employment rate growth) for 2011-2013, emphasized the following conclusions (Table VI.): (v) a positive relationship between entrepreneurship and employment rate growth, because β has a high value ($\beta = 0.066$), $p < 0.05$ ($p = 0.002$) and $t > 4.302$ ($t = 18.754$); (vi) there is a positive relationship between the entrepreneurial perceptions and attitudes, respectively employment rate growth, for the reason that β is positive and significant ($\beta = 0.034$), $p < 0.05$ ($p = 0.001$) and $t > 4.302$ ($t = 31.403$); (vii) there exists a positive relationship between

entrepreneurial activity and employment rate growth, as β is fairly high value ($\beta=0.365$), $p<0.05$ ($p=0.007$) and $t>4.302$ ($t=11.725$); (viii) there is a positive relationship between entrepreneurial aspirations and employment rate growth, as β is significant ($\beta=0.022$), $p<0.05$ ($p=0.003$) and $t>4.302$ ($t=17.518$).

In the cases of (v)-(viii) hypotheses, a superior ($R>0.75$) association can be noticed between the independent and dependent variables ($R_5=0.997$, $R_6=0.998$, $R_7=0.992$, $R_8=0.996$), while over 98% from the variation of the dependent variable ($R^2>0.98$) owes to the cumulated influence of the independent variables ($R_5^2=0.994$, $R_6^2=0.997$, $R_7^2=0.985$, $R_8^2=0.993$).

Consequently, hypotheses (v) – (viii) were validated for this variant of the model, which aimed to identify the 4 year-lagged effects of entrepreneurship upon the labour market.

TABLE VII.

RESULTS FOR THE RESEARCH HYPOTHESES TESTING IN ORDER TO IDENTIFY THE 5 YEAR-LAGGED EFFECTS OF ENTREPRENEURSHIP UPON THE ROMANIAN LABOUR MARKET

Hypotheses	R	R ²	β	t	p	Results
(v) entrepreneurship → employment rate growth	0.9975	0.9951	0.0686	20.2195	0.0024	validated
(vi) entrepreneurial perceptions and attitudes → employment rate growth	0.9989	0.9979	0.0361	30.9539	0.0010	validated
(vii) entrepreneurial activity → employment rate growth	0.9916	0.9833	0.3787	10.8592	0.0083	validated
(viii) entrepreneurial aspirations → employment rate growth	0.9990	0.9981	0.0234	32.9527	0.0009	validated

The analysis of the obtained results, for which we considered as independent variables (entrepreneurship and its components) measured between 2007 and 2009, manifesting their effects upon the dependent variable (employment rate growth) for the 2012-2014 time period, highlighted (Table VII.): (v) a positive relationship between entrepreneurship and employment rate growth, because β has a high value ($\beta=0.068$), $p<0.05$ ($p=0.002$) and $t>4.302$ ($t=20.219$); (vi) there is a positive relationship between the entrepreneurial perceptions and attitudes, respectively employment rate growth, for the reason that β is positive and significant ($\beta=0.036$), $p<0.05$ ($p=0.001$) and $t>4.302$ ($t=30.953$); (vii) there exists a positive relationship between entrepreneurial activity and employment rate growth, as β is fairly high value ($\beta=0.378$), $p<0.05$ ($p=0.008$) and $t>4.302$ ($t=10.859$); (viii) there is a positive relationship between entrepreneurial aspirations and employment rate growth, as β is significant ($\beta=0.023$), $p<0.05$ ($p=0.0009$) and $t>4.302$ ($t=32.952$).

In the cases of (v)-(viii) hypotheses, a superior and very good ($R>0.75$) association can be noticed between the independent and dependent variables ($R_5=0.997$, $R_6=0.998$, $R_7=0.991$, $R_8=0.999$), while over 98% from the variation of the dependent variable ($R^2>0.98$) owes to the cumulated influence of the independent variables ($R_5^2=0.995$,

$R_6^2=0.997$, $R_7^2=0.983$, $R_8^2=0.998$).

In conclusion, all the research hypotheses (i)-(viii) were validated in the entrepreneurial process model for Romania with 4 and 5 year-lagged dependent variables. This shows that, in Romania, on one hand, exists a cause-effect relationship between the conditions of the entrepreneurial framework and entrepreneurship, and on the other hand, the effects of entrepreneurship upon the labour market become significant after a time-lag of at least 3 years.

IV. CONCLUSIONS AND RESEARCH LIMITATIONS

From the conducted research can be detected a positive and significant relationship between the general conditions of the national framework, respectively of the entrepreneurial framework (efficiency enhancing and innovation sophistication factors) and entrepreneurship. Therefore, in Romania, the presence of an adequate infrastructure, of the level of primary education and a good status of the health system, constitutes a starting point to assure the conditions of the entrepreneurial framework, of efficiency enhancing and innovation. These competitiveness factors influence in a positive way the role of entrepreneurship and the nature of entrepreneurial activities in this country.

Moreover, at the level of our country, a stimulated entrepreneurial behaviour by the general conditions of the national framework and of the entrepreneurial framework does not generate simultaneously positive effects for the labour market. Only for a time-lag of over 3 years, entrepreneurship remains a significant factor for labour force employment. The causes regard, on one hand, the necessity to describe the labour market by a set of multiple growth indicators in order to obtain higher informational content [9]. On the other hand, the effects on the labour market are given by the interaction results between the entering and exiting effects of the firms from the market [3]. The appearance of new firms on the market, following of the opportunity- and necessity-driven entrepreneurship stimulation, are in the same time creators and destructors of workplaces, because they stimulate competition and has as effects the exit of less efficient firms from the market.

In Romania, the high degree of labour market regulations many times destroys the stimulants for the entrepreneurial activity, forcing firms to leave the market. The high level of regulations on the labour market generates superior cost for workforce employment and deployment, respectively stimulates firms to occupy personal without contracts.

The analysis period enclosed the beginning of the economical recession, characterised by a high increase of unemployed people. The start of the recession headed to a necessity self-employment, as a “disguised form of unemployment”, rather than a result of a veritable entrepreneurial spirit manifestation, with simultaneous negative effects on the labour force market. In the same time, the transition to the position of employed entrepreneurs was less probable, while people with entrepreneurial skills, creating

new firms from necessity, had in time positive effects on the employment rate on the labour force market. Moreover, before the economical recession period, the micro-entrepreneurial sector from Romania, included qualified persons, with entrepreneurial skills, who voluntarily opted for self-employment, generating in time, through the newly created firms, an increase in the employment rate.

Additionally, the impediment for monopoly formation, disloyal competition and the protection of the intellectual property, parallel with the reduction of interventional level of the state in the economic sphere and the revision regulations for the employed labour force may assure, on medium and long term, the positive effects of entrepreneurship on the dynamics of the labour market.

In these conditions, for the Romanian public authority, appears the challenge of efficient resource allocation, in order to sustain the entrepreneurial activities and also to uphold the higher education institutions with the role of entrepreneurial spirit development. But, „promotion of entrepreneurship at universities should not be optional. Therefore, universities should start systematic effort in entrepreneurship promotion regardless of effort size. Financial impact on the economy should drive policy-makers to legislate this change so as to encourage academic institutions, and public ones in particular, to fulfil their duties toward the taxpayers” [16].

Finally, must be emphasised the fact that, the inclusion in the research model of the entrepreneurial behaviour manifested within the large firms existing at national and international level (intrapreneurship), may also generate higher informational content results for the conducted research.

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