

## ENTREPRENEURIAL POTENTIALITIES IN EUROPE: ITALY IN COMPARISON TO OTHER COUNTRIES

***Abstract:** Entrepreneurship is an important driver of development, employment and productivity. Economic system in modern and developed countries is founded on a dynamic “entrepreneurial system”, where innovation plays the role of main driver of economy and society. First part of the paper intends to analyze the structure of REDI index elaborated by a team of experts for measuring entrepreneurship in 125 macro-regions of European Union. This index has the objective of capturing differences in the quality of entrepreneurial activity, taking in account the different environmental factors. Second part of the paper is dedicated to a comparative analysis of the REDI index calculated for Italian macro-regions and Romanian ones. Finally, several on field researches are utilized in order to analyze the characteristics of Italian entrepreneurial situation.*

***Keywords:** entrepreneurship, innovation, REDI index, entrepreneurial park, Italian human capital/social capital/creativity.*

### Introduction

Entrepreneurship is an important driver of development, employment and productivity.

Economic system in modern and developed countries is founded on a dynamic “entrepreneurial system”, where innovation plays the role of main driver of economy and society.

This tendency is confirmed by the following phenomena:

- (1) importance of knowledge is increasing in organizations in comparison to tangible assets and labour;
- (2) individuals are the main actors in knowledge-based organizations;
- (3) small and medium enterprises are increasing their role in translating innovative products and services in the market;
- (4) central and territorial institutions understand that entrepreneurship is driven by individuals but it needs of a wider economic and social context;
- (5) political institutions pay attention to promote entrepreneurial innovation and to support high-potential start-ups.

*This paper and the research will be utilized to investigate points 4) and 5).*

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*The purpose is to evidence that the level of entrepreneurship is influenced by characteristics of territories where entrepreneurs act.*

### **1. The architecture and the components of REDI index**

The REDI index<sup>2</sup> has the purpose of measuring regional entrepreneurship by a complex index that incorporates both individual and regional levels of analysis. Actually this position is supported by Acs *et al.* (2013): they declare that the interaction between individuals and their contexts determines the economic and social benefits delivered through entrepreneurship.

The REDI index has the objective of capturing differences in the quality of entrepreneurial activity (such as creativity, innovation, knowledge and technology intensity, value creation, orientation and potential for high growth), taking in account the different environmental factors. Actually, the efficiency and quality of institutional environment has a big influence on the quality of entrepreneurship and on the economic and social impact of entrepreneurial action.

REDI index studies the regional entrepreneurship ecosystem<sup>3</sup>, on giving particular emphasis to the policies and initiatives offered by regional context.

Authors of the REDI index wrote: “The Systems of Entrepreneurship (SE) theory is based on the following core assumptions:

1. Economic growth is ultimately driven by a trial-and-error resource allocation process, under which entrepreneurs allocate resources towards productive uses;
2. This process is driven by individual-level decisions, but those decisions are conditioned by contextual factors;
3. Similarly, the outcomes of individual-level entrepreneurial decisions are conditioned by contextual factors;
4. Because of the multitude of interactions, country-level entrepreneurship is best thought of as a system, the components of which co-produce system performance<sup>4</sup>.

According to the following table<sup>5</sup> the REDI index has a multi-level structure: it is based on 3 sub-indexes (attitudes, abilities, aspirations); the sub-indexes are composed by 14 pillars. Each of the fourteen pillars consists of an institutional and an individual variable.

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<sup>2</sup> REDI index is elaborated by Szerb László, Zoldan J. Acs, Erkko Autio, Raquel Ortega-Argilés, Éva Komlósi. The report and the associated research are financed by the European Commission Directorate-General Regional and Urban Policy, European Union, Publications Office of the European Union, Luxembourg, 2014.

<sup>3</sup> “A System of Entrepreneurship is the dynamic, institutionally embedded interaction between entrepreneurial attitudes, ability, and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures” (Acs *et al.*, 2013)

<sup>4</sup> See: Szerb László, Zoldan J. Acs, Erkko Autio, Raquel Ortega-Argilés, Éva Komlósi, *REDI: The Regional Entrepreneurship and Development Index –Measuring regional entrepreneurship*, European Union, Publications Office of the European Union, Luxembourg, 2014, page 30.

<sup>5</sup> Source: Szerb László, Zoldan J. Acs, Erkko Autio, Raquel Ortega-Argilés, Éva Komlósi, *op. cit.*, page 36.

REGIONAL ENTREPRENEURSHIP AND DEVELOPMENT INDEX																								
Entrepreneurial Attitudes Sub-Index					Entrepreneurial Abilities Sub-Index					Entrepreneurial Aspirations Sub-Index														
Pillars																								
Opportunity Perception	Start-up Skills	Risk Acceptance	Networking	Cultural Support	Opportunity Startup	Technology Adoption	Human Capital	Competition		Product Innovation	Process Innovation	High Growth	Globalization	Financing										
Variables																								
Market Agglomeration	Quality of Education	Skill Perception	Business Risk	Risk Acceptance	Social Capital	Know-Entrepreneurs	Open society	Career Status	Business Environment	Opportunity Motivation	Absorption Capacity	Technology Level	Education and Training	Business Strategy	Competitions	Technology transfer	New Product Development	New Tech Technology	Clustering	Gazelle	Connectivity	Export	Financial Institutions	Informal Investment

The choice of indicators to be utilized for describing/measuring any phenomenon represents a decision of scientific high responsibility. Always can be found an opinion able to confute or criticize any choice; always will be possible – especially ex post – identifying a different basket of indicators, maybe better.

Also for this research different indications might be proposed, but this is not the purpose of our paper. We intend to focus our attention on the comparison of REDI index in some EU territories; as consequence, we limit ourselves to receive either the structure of the REDI index proposed by the Authors, either the variables they assumed for measuring<sup>6</sup>.

➤ The **entrepreneurial attitude (ATT)** sub-index aims to identify the attitudes of a region's population as they relate to entrepreneurship. It consists of five pillars.

□ *Opportunity Perception* for recognizing and exploring novel business opportunities. It combines the opportunity recognition of the population (individual variable) with the market agglomeration (institutional variable).

□ *Startup Skills* are necessary for exploiting opportunities. Skills depend on the populations' self-esteem about its ability to start successfully a business (individual variable) and on the quality of education (institutional variable).

<sup>6</sup> See: Szerb László, Zoldan J. Acs, Erkko Autio, Raquel Ortega-Argilés, Éva Komlósi, *op.cit.*, pages 37–39.

□ *Risk Acceptance* concerns the fear of failure in the business. The magnitude of risk acceptance of the population (individual variable) is combined to the business disclosure rate of the country (institutional variable).

□ *Networking* is vital for successful startups. The personal network of entrepreneur (individual variable) is mixed together with the levels of social capital and technological readiness (institutional variable).

□ *Cultural Support* concerns the opinion about successful entrepreneurs. The view of the population about the carrier status of entrepreneurs (individual variable) is combined with open society (institutional variable).

➤ The ***entrepreneurial abilities (ABT)*** sub-index is principally concerned with measuring some important characteristics of entrepreneur and startup with high growth potential.

□ *Opportunity Startup* is an important aspect of high growth potential; it is the drive for startups. It mixes the opportunity motivation of the population (individual variable) with the favorability of the business environment (institutional variable).

□ *Technology Adoption* highlights the role of technology and creative sectors. The percentage of the young and nascent businesses belonging to technology-intensive or creative sectors (individual variable) is associated to the technological readiness of the firms in a country and the regional level of employment in knowledge intensive and high technology firms (institutional variable).

□ *Human Capital* for exploring people who received some training to have an updated knowledge. The share of early phase entrepreneurs who have over secondary level of education (individual variable) is merged together with the involvement of the region's population in training and life-long learning (institutional variable).

□ *Competition*: businesses that face a low level of competition could grow faster than businesses with many competitors. The number of competitors benchmarks those ventures that have not too many competitors (individual variable). Business strategy (institutional variable) is assumed for measuring the country's nature of competitive advantage and the regional level of sophistication in businesses.

➤ The ***entrepreneurial aspiration (ASP)*** sub-index refers to the distinctive, qualitative, strategy-related nature of entrepreneurial activity. It is particularly important to identify the most relevant institutional and other quality-related interaction variables.

□ *Product Innovation* reflects not only to the newness of the product (individual variable) but also the level of technology transfer and ability of the businesses in the region to create such products (institutional variable).

□ *Process Innovation* has following components: the technology innovation potential of the businesses (individual variable) and the technology development as the percentage of R&D in the regional gross domestic product (institutional variable).

□ *High Growth* includes the percentage of “gazelle” with high growth ambitions (individual variable) and a clustering situation where businesses are supported by other cluster members (institutional variable).

□ *Globalization* concerns the capability of high growth potential businesses to internationalize. It combines together the export potential (individual variable) and the connectivity of the region, that is the density of railways, highways and the frequency of air flight (institutional variable).

□ *Financing* is frequently viewed as the most important aspect of exploiting high growth potential. The measure of informal financing possibilities provided by friends, relatives or business angels (individual variable) is combined with the measuring of access to financial services and different capital and depth markets (institutional variable).

## 2. REDI index in European Union macro regions

After having structured the REDI index, the Authors classified EU macro regions according to the criteria of the *Nomenclature of Territorial Units for Statistics (NUTS)*. NUTS European system is structured on the following characteristics:

Level	Characteristics	Minimum population	Maximum population
NUTS 1	Major socio-economic regions	3 million	7 million
NUTS 2	Basic regions for the application of regional policies	800000	3 million
NUTS 3	Small regions for specific diagnoses	150000	800000

NUTS 1-2 were examined by the Authors of the survey on utilizing 28 variables (two variable for each pillar). Individual variables are based on indicators from the 2007–2011 GEM Adult Population Survey dataset, except two innovation indicators that are from the European Union data collection. The institutional variables are obtained from various sources<sup>7</sup>.

The result of their work is in the following tables: the REDI scores are calculated for 24 Member States of EU (except Bulgaria, Cyprus, Luxembourg, Malta).

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<sup>7</sup> For additional details about the sources of indicators, see: Szerb László, Zoldan J. Acs, Erkkó Autio, Raquel Ortega-Argilés, Éva Komlósi, *op. cit.*, Appendices.

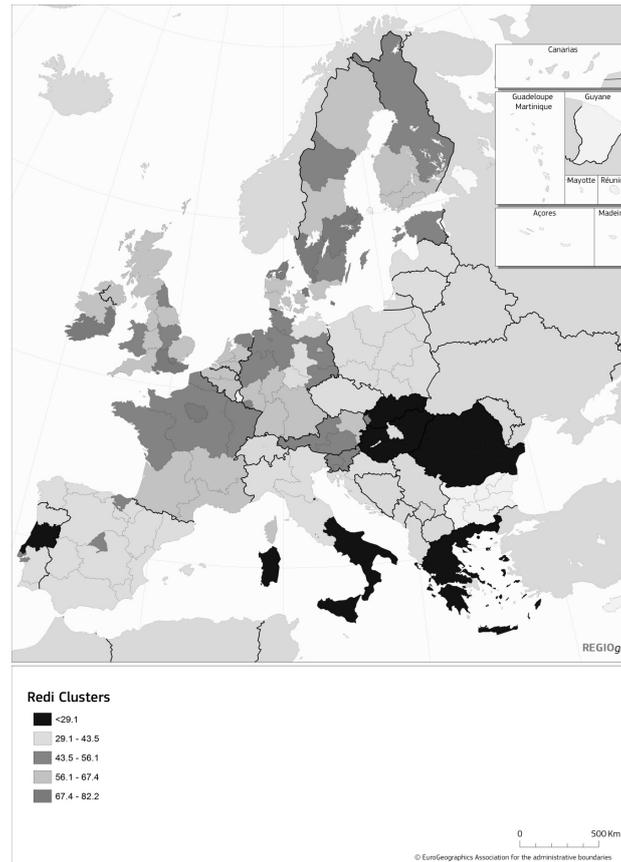
Rank	Code	Region	REDI
1	DK01	Hovedstaden	82.2
2	UKI	London	79.9
3	FR1	Île de France	79.2
4	SE11	Stockholm	73.8
5	SE12	Östra Mellansverige	72.7
6	SE23	Vastsverige	72.2
7-8	IE02	Southern and Eastern	72.0
7-8	DK05	Nordjylland	72.0
9	UKJ	South East (UK)	69.5
10	SE22	Sydsverige	67.3
11	DE3	Berlin	67.2
12	DK03	Syddanmark	65.1
13	BE1	Région de Bruxelles-Capitale	64.9
14	SE33	Övre Norrland	64.7
15	NL3	West-Nederland	64.4
16	DK04	Midtjylland	64.3
17	FR7	Centre-Est (FR)	64.2
18	IE01	Border, Midland and Western	63.4
19	DE7	Hessen	63.3
20	FI1B	Helsinki-Uusimaa	62.2
21	BE2	Vlaams Gewest	62.1
22	UKH	East of England	61.5
23-25	DK02	Sjælland	60.7
23-25	UKK	South West (UK)	60.7
23-25	AT1	Ostösterreich	60.7
26	BE3	Région wallonne	60.1
27	FR8	Méditerranée	59.4
28-29	UKD	North West (UK)	59.0
28-29	UKM	Scotland	59.0
30-31	FI1C	Etelä-Suomi	58.9
30-31	FR6	Sud-Ouest (FR)	58.9
32	FI19	Länsi-Suomi	58.7
33	UKG	West Midlands (UK)	58.6
34	DE1	Baden-Württemberg	58.1
35	UKN	Northern Ireland (UK)	58.0
36	SE31	Norra Mellansverige	57.7
37	DE2	Bayern	57.3
38	NL4	Zuid-Nederland	57.0
39	NL2	Oost-Nederland	56.5
40	UKE	Yorkshire and The Humber	56.4
41	DEB	Rheinland-Pfalz	56.2

Rank	Code	Region	REDI
42	UKF	East Midlands (UK)	55.3
43	DEA	Nordrhein-Westfalen	55.0
44	DEC	Saarland	54.9
45-46	UKL	Wales	54.7
45-46	ES30	Comunidad de Madrid	54.7
47	DE6	Hamburg	54.3
48	AT2	Südösterreich	52.0
49	FR5	Ouest (FR)	51.8
50	DE9	Niedersachsen	51.6
51	SI02	Zahodna Slovenija	51.3
52	FI1D	Pohjois- ja Itä-Suomi	51.2
53	NL1	Noord-Nederland	51.1
54	FR2	Bassin Parisien	50.9
55	AT3	Westösterreich	50.3
56	DED	Sachsen	50.0
57	SE21	Smaland med öarna	49.9
58	FR4	Est (FR)	49.7
59	UKC	North East (UK)	48.9
60	FR3	Nord - Pas-de-Calais	48.8
61	DE4	Brandenburg	48.5
62	DE5	Bremen	48.4
63	SE32	Mellersta Norrland	48.2
64	EE	Estonia	45.9
65	ES21	País Vasco	45.6
66	SI01	Vzhodna Slovenija	45.3
67	PT17	Lisboa	44.6
68	SK01	Bratislavský kraj	44.0
69	DEF	Schleswig-Holstein	43.6
70-72	ES12	Principado de Asturias	42.3
70-72	ES51	Cataluna	42.3
70-72	DEE	Sachsen-Anhalt	41.3
73	ITC	Nord-Ovest	40.4
74	ES22	Comunidad Foral de Navarra	39.0
75	ES52	Comunidad Valenciana	38.1
76	ES53	Illes Balears	37.7
77	ES23	La Rioja	37.6
78	DEG	Thüringen	37.2
79	ES61	Andalucía	37.1
80	CZ	Czech Republic	37.0
81-82	ITI	Centro (IT)	36.9
81-82	ES11	Galicia	36.9

Rank	Code	Region	REDI
83	ES41	Castilla y León	36.8
84	ES62	Región de Murcia	36.7
85	ES13	Cantabria	36.5
86-88	ITH	Nord-Est	36.1
86-88	PL5	Region Południowo-Zachodni	36.1
86-88	PL1	Region Centralny	36.1
89	DE8	Mecklenburg-Vorpommern	35.6
90	ES70	Canarias (ES)	35.5
91	LT	Lithuania	35.2
92	PL2	Region Południowy	34.1
93	LV	Latvia	33.8
94	PL6	Region Północny	33.2
95	ES24	Aragón	32.6
96	PL4	Region Północno-Zachodni	32.3
97	ES42	Castilla-la Mancha	32.1
98	HR03	Jadranska Hrvatska (Adriatic Croatia)	32.0
99	HU10	Közép-Magyarország	31.4
100	EL3	Attiki	31.3
101	PT15	Algarve	30.9
102	ES43	Extremadura	30.3
103	HR04	Kontinentalna Hrvatska (Continental Croatia)	29.9
104	PT18	Alentejo	29.4
105-106	PL3	Region Wschodni	29.2
105-106	PT11	Norte	29.2
107-108	PT16	Centro (PT)	27.6
107-108	ITG	Isole	27.6
109	ITF	Sud	27.3
110	SK02	Západné Slovensko	25.8
111	SK03	Stredné Slovensko	24.9
112	SK04	Vychodné Slovensko	24.5
113	HU23	Dél-Dunántúl	23.8
114	EL1	Voreia Ellada	22.7
115	HU31	Észak-Magyarország	22.4
116	RO3	Macroregiunea trei	22.1
117	HU21	Közép-Dunántúl	22.0
118	HU22	Nyugat-Dunántúl	21.5
119-120	HU32	Észak-Alföld	21.4
119-120	EL4	Nisia Aigaiou. Kriti	21.4
121	HU33	Dél-Alföld	21.0
122	RO4	Macroregiunea patru	19.7
123	EL2	Kentriki Ellada	19.5
124-125	RO1	Macroregiunea unu	19.4
124-125	RO2	Macroregiunea doi	18.4

The authors elaborated the following map in colors, for capturing the main differences among macro regions: they compacted 125 regions (only NUTS-1 and NUTS-2 regions) in five clusters according to the REDI scores<sup>8</sup>:

- from the least entrepreneurial group (less than 29,1 points);
- to the most entrepreneurial group (67,4 – 82,2 points).



<sup>8</sup> The authors describe that the map “... shows the cluster membership of all the 125 regions. Nine regions from 82.2 to 69.5 REDI points belong to the best cohort. These are mainly Nordic country regions. 32 regions, from the 10th to the 41st place, constitute the second group of regions. Their REDI scores range from 67.3 to 56.2. Besides the remaining of the Nordic country regions, United Kingdom, Belgian, Dutch and some French as well as the best German regions can be found here. The following 28 regions the UK East Midlands (55.3 REDI points, 42nd place) to the German Schleswig-Holstein (43.6 REDI points, 69th place) form the third group. Most Austrian, German and French regions form this cluster together with the best Central and South European regions. The most populous is the fourth group with 37 regions ranging from the 70–72nd place to the 105–106th place. Their REDI scores are much lower, 42.3–29.2 REDI scores. Mainly former East German, Spanish, Italian, Polish and Croatian regions make up this cluster. The last group of regions is mainly from Greece, Hungary, Portugal Slovakia and Romania together with two Italian regions. They occupy the 107–125th places with 27.6–18.4 REDI scores” (See: Szerb László, Zoldan J. Acs, Erkkó Autio, Raquel Ortega-Argilés, Éva Komlósi, *op. cit.*, page 55).

### 3. The REDI score in Regions of Italy: comparative quantitative analysis

Observing the map, it is possible to note that Italy is decidedly divided in two parts.

The REDI index for South and Isles (Sicily and Sardinia) is at the lowest level in the scale elaborated by the Authors. Also North and Centre are not in good condition, being positioned at the penultimate level.

Our task is to operate a double comparison:

- Analyzing the main differences among the Italian Regions;
- Comparing the situation of Italian regions with other European regions.

#### 3.1. Comparison among Italian Regions

The classification elaborated by the Authors is the following:

<u>Italian regions</u>	<u>REDI index</u>	<u>RANK</u>
ITC – North-West	40.4	73
ITI – Centre	36.9	81–82
ITH – North-East	36.1	86–88
ITG – Isle	27.6	107–108
ITF – South	27.3	109

It is possible to evidence:

- The substantial homogeneity of the first three regions (the maximum deviation is into the range of 4.3 points) and the equality of the last two regions (only 0.3 points);

- The big fracture (about 10 points and more) between North/Centre and South/Isles.

- These data confirm the existence of “*two Italy-s*”: North and Centre of Italy separated by South and Isles. Actually, the different level of development of South and Isles (named “*questione meridionale*”) represents one unsolved social and economic question<sup>9</sup>.

We intend to individualize the factors that characterize the fracture between the “*two Italy-s*”, on utilizing the 3 sub-indexes (attitudes, abilities, aspirations) composing the REDI index.

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<sup>9</sup> Luca Ricolfi (2014) write that Robert Putman individualized the main reason of South-Italian regions underdevelopment in the inadequacy of social capital. The paper that Putman wrote in 1993 stimulated several analysis finalized to connect the themes of growth with the presence and quality of social capital. Italian Author L. Guiso wrote in 2011 that social capital is composed by: confidence in others, participation, relationship networking.

<u>Code</u>	<u>Region</u>	<u>ATT</u>	<u>ABT</u>	<u>ASP</u>
ITC	North-West	38.5	35.8	46.8
ITI	Centre	37	31.9	42
ITH	North-East	37.5	34.7	36.3
ITG	Isle	29.5	22.2	31.1
ITF	South	29.4	20.3	32.2

The comparison of the sub-indexes in Italian regions shows that the entrepreneurial gap concerns all the aspects (attitudes, abilities, aspirations), so confirming the big fracture existing between the macro-areas of North/Centre and South/Isles. This fact inducts us to restrict the comparison to the internal of each macro-area.

### *Comparison into the macro-area North/Centre*

We just noted that the maximum deviation of the REDI index among the three regions is restricted into the range of 4.3 points. Nevertheless this deviation assumes different values on analyzing each sub-index.

Under the profile of *attitudes* the maximum deviation is reduced to 1.5 points in favour of North-West; besides North-East is only 0.5 points better than Centre. The similarity of scores shows that entrepreneurial attitudes are substantially homogeneous into the macro-area.

Higher deviation is observed in *abilities*: Centre is 3.9 points less than North-West, while North-East is no far (1.1 points).

The maximum deviation among the regions concerns *aspirations*: North-East is 10.5 points lower than North-West and Centro is 4.6 points far.

According to the notes of authors, *abilities* and *aspirations* concern entrepreneurship related to nascent and start-up business activities; while the third sub-index aims to identify the *attitudes* of a region's population as they relate to entrepreneurship. The higher deviations in *aspirations* and *abilities* put in evidence the different capacity of regions in creating and starting new enterprises, in spite of a substantial adjustment of entrepreneurial *attitudes* of regional populations.

As consequence, we can deduct that entrepreneurial performances are not conditioned by the characteristics of North/Centre populations, than by the policy adopted by territorial institutions. They have the duty and the responsibility to correct and better their issues, in order to support and increase new enterprises, especially innovative ones.

### *Comparison into the macro-area South/Isles*

The substantial adjustment of all sub-indexes in two regions put in evidence an homogeneity in low entrepreneurship concerning as characteristics of population

as performances of institutions. This is an additional demonstration that South and Isles need a structural and strong frame-project in order to reduce the distance to the “other” Italy.

### *Comparison of 5 Italian regions on the values of pillars*

Additional investigation is possible on comparing pillars. Following table shows 14 pillar scores for Italian Regions<sup>10</sup>.

In green color are the pillar values higher than REDI index (more than 4 points).

In red color are the pillar values lower than REDI index (more than 4 points).

The table underlines:

– On vertical line the pillars with higher values (green color) and lower values (red color): they represent the strong and weak points of each regional system respectively;

– On horizontal line the pillars having typologies of values that are common or prevalent in Italian regions

	<u>North-West</u>	<u>Centre</u>	<u>North-East</u>	<u>Isle</u>	<u>South</u>
<b>REDI index</b>	<b>40,4</b>	<b>36,9</b>	<b>36,1</b>	<b>27,6</b>	<b>27,3</b>
<b>PILLAR VALUES:</b>					
Opportunity Perception	50	42	42	33	41
Startup Skills	39	40	35	35	39
Risk Acceptance	54	55	55	49	52
Networking	25	27	29	25	25
Cultural Support	37	33	40	25	19
Opportunity Startup	27	19	33	05	01
Technology Adoption	56	41	43	27	38
Human Capital	20	24	27	22	20
Competition	50	51	44	45	36
Product Innovation	36	42	50	31	48
Process Innovation	44	75	47	58	63
High Growth	58	31	17	30	29
Globalization	57	37	24	29	22
Financing	63	47	63	30	35

<sup>10</sup> Table shows the values of non-penalized pillars; that is the values before the statistical penalizing procedure that produced a difference between the original and the after-penalty pillar values. This statistical procedure was adopted by the Authors in order to increase the coherence of their analysis. As consequence, the original average value of single pillars does not exactly correspond to the value of the after penalization sub-index. We decided to examine non-penalized values of pillars, because of they reflect the original situations observed in regions.

### ***Relevant characteristics of the regional systems***

North-West is the most entrepreneurial region: it has 7 strong points (on the total of 14 pillars). The strongest pillars concern Financing, High Growth, Globalization and Technology Adoption (other three factors have minor impact). This is a winning basket, enabling to conduct the region towards an higher rank. Nevertheless it is necessary to better the most heavy deficiencies, concerning Human Capital, Networking, Opportunity Startup.

Centro totalizes 6 green factors (on 14 pillars). Value of Process Innovation is relevant. It is evident that the strategy to adopt can be in favor of additional benefits for reduction of costs and optimization of processes; an additional demonstration is done by the high value of Competition. Also for Centro are elevate points in Financing, Product Innovation, Opportunity Perception and Risk Acceptance. The most important deficiencies concern Opportunity Startup, Human Capital, Networking and High Growth.

North-West totalizes 7 strong points (on 14 pillars). Relevant are: Financing, Product and Process Innovation, Competition, Technology Adoption; also Opportunity Perception and Risk Acceptance have significant values. Low values concern High Growth and Globalization; even human factors are low: Human Capital and Networking.

Isle are pointed on 5 strong factors. Optimum values of Process Innovation and Competition; they are followed by Risk Acceptance, Startup Skills, Opportunity Perception. The higher weaknesses are in two factors: very heavy is the low value of Opportunity Startup, followed by Human Capital. For this region is possible to observe the prevalence of factors that are equal/similar to the global value of REDI index: 7 on the total of 14 pillars.

South is the region having more factors higher than its average: 8 pillars on the total of 14; this is an additional prove of the contradictions existing in this territory. High points for Process and Product Innovation, associated to good Competition and Technology Adoption. Also Financing is higher than the average, as well as Risk Acceptance, Startup Skills, Opportunity Perception. Negative are 4 factors under the average: Opportunity Startup, Cultural Support, Human Capital, Globalization.

### ***Relevant characteristics of Italian System***

Over the aspects of the single regions, it is important to individualize the characteristics that are common in all or mostly all Italian regions.

The most frequent strong points are Risk Acceptance and Opportunity Perception: they are present in all 5 regions. Competition, Process Innovation and Financing are strong in 4 regions. Finally Technology Adoption and Product Innovation reinforce 3 regions.

On the contrary, the most frequent weak point is Human Capital: it is present in all 5 regions. Opportunity startup is weak in 4 regions and Networking in 3 regions.

Looking for the common factors, it is possible to observe that:

➤ All regions of Italian System are reinforced by 3 factors (Risk Acceptance, Opportunity Perception, Competition); on the contrary they are weak owing to the same factor: Human Capital. This factor must be pushed and increased by stakeholders on adopting a finalized policy and adequate cultural infrastructures.

➤ Four regions are reinforced by Process Innovation and Financing, while the weakness is in Opportunity Startup. Italy is not able to offer real opportunities for innovative and high-potential start-ups, even if the factor Financing is not so penalizing. On the contrary Technology Adoption and Product Innovation are penalizing.

Following is the text that authors wrote about Italy:

“It is difficult to describe the entrepreneurial profile of such a large country as Italy according to its limited number, five, NUTS1 regions. While the two top performing Italian regions, North-West and Centre are perform similarly to Spanish and the former Eastern German regions, Isle and South rank just ahead of some Slovakian and Hungarian regions. While the differences in the level of entrepreneurship are significant – between 40.4 and 27.3 – the pillar profiles of the regions are very similar. Although the population’s *Opportunity perception* and *Risk perception* are on a relatively acceptable level, *Opportunity startup* appears the most binding pillar for four regions. Besides *Opportunity startup*, *Human capital*, *Networking* and *Cultural support* all appear to require national action. *Globalization* and *High growth*, problematic for four regions more, are categorized as top regional policy priorities. *Product innovation* is flagged a binding constraint only for North-West. Finally, *Startup skills* pillar is relatively low in three regions, constituting a low level regional policy priority”<sup>11</sup>.

### **3.2. Comparison among Italian regions and other European regions**

We intend to compare the scores of the worst Italian region (South) to the worst Romanian region (*Macroregiunea doi*); in addition to compare the best Italian region (North-West) and Romanian region (*Macroregiunea trei*) to the best European region (Hovedstaden, Denmark).

Between the two regions exists a deviation (see Tot) of 8.9 points in REDI index. The deviation increases until 10 (about) for attitudes and abilities, while decreases to 7 for aspirations.

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<sup>11</sup> See: Szerb László, Zoldan J. Acs, Erkkó Autio, Raquel Ortega-Argilés, Éva Komlòsi, *op. cit.*, pages 107–108.

***Comparison of the lowest scores in Italy South (Sud) and Romania (Macroregiunea doi)<sup>12</sup>***

<u>RANK</u>	<u>CODE</u>	<u>REGION</u>	<u>INDEXES</u>
109	ITF	Sud	Tot 27,3 Att 29,4 Abt 20,3 Asp 32,2
124–125	RO2	Macroregiunea doi	Tot 18,4 Att 19,7 Abt 10,3 Asp 25,2

The comparison among 14 pillars can increase the comprehension. Taking in account that the total deviation is about 9 points, we will comment the differences higher than 9 points: in yellow if they are in favor of South and in cyclamen if they are in favor of *Macroregiunea doi*.

<u>PILLARS</u>	<u>Sud (Italy)</u>	<u>Macroregiunea doi (Romania)</u>
Opportunity Perception	41	33
Start-up Skills	39	3
Risk Acceptance	52	80
Networking	25	6
Cultural Support	19	5
Opportunity Startup	1	1
Technology Adoption	38	9
Human Capital	20	15
Competition	36	18
Product Innovation	48	15
Process Innovation	63	34
High Growth <sup>29</sup>	22	
Globalization <sup>22</sup>	49	
Financing	35	26

Between the two regions, South of Italy is exceeding in several pillars. Nevertheless Romanian region is better in two pillars:

<sup>12</sup> Macroregion two-RO2 (*Macroregiunea doi*) concerns: RO21 North-East (Bacău County, Botoșani County, Iași County, Neamț County, Suceava County, Vaslui County) and RO22 Sud-Est (Brăila County, Buzău County, Constanța County, Galați County, Tulcea County, Vrancea County)

- Risk Acceptance (+28 points);
- Globalization (+27 points).

Following is the text that authors wrote about Romania:

“Romania has four NUTS1 regions with very similar, low-level entrepreneurial performance together with some Greek and Hungarian regions. The entrepreneurial profile of the regions is very similar. The REDI scores of the Romanian regions range from 22.1 to 18.4. There are five pillars that do not appear as priorities, relatively speaking: *Opportunity perception*, *Risk perception*, *Process innovation*, *High growth* and *Globalization*. For most of the bottleneck pillars, national-level policy actions appear necessary. These are the cases in the *Opportunity startup*, *Startup skills*, *Networking*, *Product innovation*, and *Cultural support* pillars. *Financing* appears a minor problem for three regions (medium level regional policy priority). *Human capital* appears marginally problematic (from the perspective of bottleneck alleviation) only for *Macroregiunea doi* (minor regional policy priority)”<sup>13</sup>.

#### ***Comparison among the best scores in Denmark, Italy, Romania***

<u>RANK</u>	<u>CODE</u>	<u>REGION</u>	<u>INDEXES</u>
1	DK01	Hovedstaden	Tot. 82,2 Att 79,7 Abt 89,6 Asp 77,2
73	ITC	North-West	Tot. 40,4 Att 38,5 Abt 35,8 Asp 46,8
16	RO3	Macroregiunea trei	Tot. 22,1 Att 21,1 Abt 16,1 Asp 29,1

At the level of pillars it is possible to observe that Hovedstaden is superior in almost all pillars; except two values (within brackets) concerning: Risk Perception (*Macroregiunea trei* is better: 77 points) and Globalization (North-West is better: 57 points).

<sup>13</sup> See: Szerb László, Zoldan J. Acs, Erkkó Autio, Raquel Ortega-Argilés, Éva Komlòsi, *op. cit.*, page 109.

<u>PILLARS</u>	<u>Hovedstaden</u> <u>(DK)</u>	<u>Nord Ovest</u> <u>(IT)</u>	<u>Macroregiunea trei</u> <u>(RO)</u>
Opportunity Perception	98	50	43
Start-up Skills	70	39	4
Risk Acceptance	(62)	54	77
Networking	100	25	9
Cultural Support	100	37	3
Opportunity Startup	98	27	1
Technology Adoption	100	56	19
Human Capital	100	20	36
Competition	100	50	18
Product Innovation	100	36	9
Process Innovation	98	44	55
High Growth	100	58	57
Globalization	(51)	57	48
Financing	68	63	13

Apart the best performing EU region (Hovedstaden), comparison between Italian and Romanian regions shows the prevalence of pillars in favour of North-West (yellow colour, with a deviation of almost 18 points). Nevertheless *Macroregiunea trei* is prevailing in three pillars (cyclamen colour):

- Risk Acceptance (+23 points);
- Human Capital (+16 points);
- Process Innovation (+11 points).

We just underlined the higher presence of Risk Acceptance (and Globalization) in *Macroregiunea doi* compared to South of Italy.

Now we have to added that Italian North-West is weaker than *Macroregiunea trei* in Human Capital and Process Innovation.

Next paragraph is dedicated to these subjects, focusing on Italian situation.

#### **4. Innovation and Human capital in Italian enterprises**

Results of REDI index and comparisons we operated confirm that entrepreneurial Italian park needs to be implemented and reinforced, principally on increasing the number of new and young entrepreneurs, enabling to create and start-up innovative businesses.

We intend to investigate the theme of innovation in Italian enterprises; it is tightly linked to the quality of Human Capital, concerning either entrepreneurs either employees and specialized workers.

Determinants of economic development change in long period: relevance of tangible assets decreases, on opening the way to intangible assets like innovation, technical progress, productivity (Schumpeter at first and Solow later)<sup>14</sup>.

Nowadays principal competitive advantages are based on “the capacity of enterprise, of economic system, of society to learn continuously; dynamism, endogen creativity, pleasure of intellectual and entrepreneurial challenge. In which way can a country supply with these talents? In the case that historical evolution favoured the country, they are found in its culture, in its behaviour. Other ways it is necessary the effort of politic actions, for stimulating creativity of inventors and entrepreneurs”<sup>15</sup>.

***Question concerning Italy: this country is it naturally endowed by innovative entrepreneurial talents, or – on the contrary – it asks a specific political project for stimulating the diffusive innovation in enterprises?***

Salvatore Rossi, General Manager of Banca d’Italia, writes<sup>16</sup> that during the period 1950–1980 the progress of Italy was positively influenced by two fundamental situations: (i) millions of persons left agriculture towards industry, which reached a large availability of workers; (ii) enterprises increased in innovation and efficiency thanks the international technological transfer combined with Italian ability in imitating, reengineering and adapting foreigner experiences.

Actually, in Italy is more present incremental innovation, rather than original innovation based on Research and Development (R&D). Demonstration is given by the fewer Italian patents in comparison with other developed countries; for instance Germany: this country counts patents at the United States Patent and Trademark Office seven times more; five times at the European Patent Office<sup>17</sup>.

One of the greatest causes of Italian scarcer innovativeness is given by the low investment in Human Capital<sup>18</sup>, especially in scientific areas. For instance, the number of students in engineering is progressively decreasing; the same for middle technicians, in number and skills.

According to the diagnosis of Salvatore Rossi, the Italian low investment in Human Capital is influenced by low demand of qualified employees and workers,

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<sup>14</sup> Schumpeter, since 1911, clarified that enterprise innovation is one fundamental factor for economic development. Several Authors developed this area of studies. Robert Solow, in the “second model” dated 1957, indicated in technical progress the factor that can explain growth accelerations in economic systems.

<sup>15</sup> Salvatore Rossi, *L’innovazione nelle imprese italiane*, paper for Fondazione Luigi Einaudi onlus, Torino, October the 15th 2014, [www.bancaditalia.it](http://www.bancaditalia.it).

<sup>16</sup> Salvatore Rossi, *op. cit.*

<sup>17</sup> The situation is better in industrial designs, models, trademarks.

<sup>18</sup> Several empiric researches put in evidence the fundamental role of Human Capital for growth and development of countries. See: Luca Ricolfi, *L’enigma della crescita*, Mondadori, Milano, 2014. We were engaged in modeling the role of Human Capital and other intangible assets (Organizing Capital and Relational Capital) for measuring enterprise performances; see: Mario Pagliacci-Pamela Terenziani, *Valutazione delle imprese knowledge-based e Basilea 2*, Amministrazione & Finanza ORO, IPSOA, Milano, 2007.

owing to the prevalence of micro and small enterprises, operating with a low level of innovation, internationalization and networking<sup>19</sup>; as consequence, this Author conclude that their cycle of life is destined to remain static.

Nevertheless, the main problem is not the small and statically size, but principally the characteristic of Italian SMEs: the majority of them are familiar enterprises, owned and managed by members of the family. As consequence, decisions and actions concerning the enterprise are directly and exclusively influenced by quality and training of family members. Typical situation is when the old founder of the enterprise – sometime tired and often culturally obsolete – does not accept to share or to leave the control of the business; at a certain moment, owing to his unexpected inability, his sons or relatives are pushed to assume the direction of the business, without experience and training. Salvatore Rossi writes: “Managing family enterprise, combined with an elderly entrepreneurial class, create the conditions of scarcer organization, innovation, internationalisation. When the enterprise is familiar and small one, it is more difficult to receive banking loans or accessing to capitals in the market; especially for financing innovations, because they are more risky and confidential. Considering the high asymmetries, internal financial sources are generally utilised for R&D; but this source depends on the economic cycle and is not available for *start-ups*”<sup>20</sup>.

The lack of R&S and the scarcer demand of highest skills generate Italian low investment in Human Capital; in fact as enterprises as single young people consider not convenient to be engaged in expensive and long time superior schools.

This severe diagnosis imposes any effort in order to better understand Italian situation.

At first are determinant the levels that can be moved by public institutions. According to Salvatore Rossi (*op. cit.*) three themes are urgent: (i) market regulation for products and labor; (ii) scientific research and educational system; (iii) policy for stimulating innovation in enterprises.

In addition, it is important investigating on the orientation of people in creating their own enterprise<sup>21</sup>. Actually the positive propensity – especially of young people – could contribute to renew and modernize Italian entrepreneurial park.

The research we intend summarize<sup>22</sup> was conducted on a sample of 688 Italian students and 818 French students of Universities in Perugia and Grenoble. The greater part of students attended human and social sciences (59.4%); 19.72% attended

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<sup>19</sup> The diagnosis of S. Rossi is in accordance with REDI index analysis. They put in evidence that some important Italian defaults concern networking and globalization.

<sup>20</sup> Salvatore Rossi, *op.cit.*

<sup>21</sup> According to studies at EU level “only 37% of Europeans would like to be self-employed, compared to 51% of people in the US and China” (see [http://ec.europa.eu/growth/smes/promoting-entrepreneurship/index\\_en.htm](http://ec.europa.eu/growth/smes/promoting-entrepreneurship/index_en.htm)).

<sup>22</sup> See: Jean Pierre Brossin, Annette Casagrande, Alessandro Montrone, Mario Pagliacci, *Gli studenti universitari e l'imprenditorialità. Uno studio comparativo Italia-Francia*, AUR&S-Quadrimestrale Agenzia Umbria Ricerche 1-2/09, Perugia, 2009.

scientific faculties and 20.53% other disciplines. A schedule was administered in order to know if they consider probable to create their own enterprise in future, taking in account their capacities. Similar investigation is in accordance to Authors of REDI index; in fact they assume *Startup Skills* as a necessary factor for exploiting opportunities. Skills depend on the populations' self-esteem about its ability to start a business successfully (individual variable) (*op. cit.*).

The greater part of students (71.21%) consider attractive the idea of creating their own enterprise, but 45.60% only declare to be confident in own capacity. The percentage decreases to 30,01% concerning students that consider probable the creation of their own enterprise in the future.

About comparison between Italian and French students:

- considering attractive the idea of creating own enterprise: 81.22% Italy; 61.36% France;
- self-esteeming in capacities of creating own enterprise: 54.99% Italy; 46.41% France;
- esteeming probable of creating own enterprise in the future: 41.46% Italy; 19.22% France.

The results of this research confirm another previous survey<sup>23</sup>, concerning as Romanian as Italian and French students, attending at Universities of Iasi, Perugia and Grenoble. Italian students are more interested than French ones in entrepreneurial activity (83.2% versus 74.3%); but are Romanian students most attracted by entrepreneurialism (96%).

In addition, it is very important to observe that this triangular survey anticipated some tendencies evidenced by the authors of REDI index. Both the surveys conclude that:

- Risk Perception and Acceptance is higher in Romania than Italy;
- Opportunity Perception is lower in Romania than Italy.

It is possible to conclude that the higher entrepreneurial attraction expressed by Romanian students is living despite of the major perception of entrepreneurial risk and the minor perception of opportunities offered by this activity. The analysis conducted in 2006 explained that "... *l'augmentation de l'impulsion entrepreneuriale réduit la motivation de 'profiter de l'opportunité', pour laisser place à une meilleure perception du risque. Cette observation confirme l'approche de Paul Reynolds, selon lequel les entrepreneurs peuvent être classés en deux catégories: les entrepreneurs motivés par l'opportunité et les entrepreneurs motivés par la nécessité. Dans notre cas, la relation directe entre la capacité entrepreneuriale et la perception du risque nous détermine à conclure que les étudiants seraient orientés vers la création et la gestion d'une entreprise propre, non tant pour la motivation de saisir des opportunités, que par la nécessité de trouver un marché de masse, professionnel et*

<sup>23</sup> See: Claude Benoit, Ewa Bogalska-Martin, Paola Matrigali, Mario G.R. Pagliacci, Gabriela Boldureanu, Ina Croitoru, *Orientation entrepreneuriale des étudiants et rôle de l'Université*, Réseau PGV EDITIONS, Grenoble, 2006.

*en concordance avec leurs études, satisfaisant du point de vue des attentes sociales et financières*<sup>24</sup>.

Coming back to Italian situation, it is possible to observe that Italian students have a strong attraction for entrepreneurialism; they are generally confident in their capacities and consider probable the engagement in their own business. Obviously it does not mean that the future flow of new entrepreneurialism will be so high; nevertheless we can hope for the future in good entrepreneurial spirit given by new enters in the competitive arena. Only few people will become new entrepreneurs, but the auspicious is that also the people working for the account of enterprises and organizations will operate aimed by similar spirit of creativity and tasting of success<sup>25</sup>.

Future new people entering in competitive arena are asked to express their best capacities in creativity and innovativeness.

We refer about a research conducted by Laboratorio Athena<sup>26</sup> investigating on the perception of creativity and innovation in a sample of students in Economics; they were compared to the needs declared by a panel of enterprises. The main purpose was in verifying if the students – as future managers – and the managers of enterprises have common opinions about creativity skills and innovativeness, so evidencing a kind of balancing in labour market between offer and demand of creative jobs<sup>27</sup>.

Concerning Italian students, a questionnaire was made among 108 students attending the Faculty of Economics in the Seats of Terni and Assisi. Another questioner was administrated to 37 enterprises, operating in sectors where the needs of innovation are relevant. All enterprises were localized in the Centre of Italy (territories of Perugia, Terni, Rieti).

The research concluded that the students of the sample “have a creative personality ... in order to conceive, to defend and to encourage innovative projects. Among the students is emerging a particular creative class, able to accept challenges and to face complexity of globalization ... they are able in utilizing transversal competences i.e. working in group, relational and critique capacities, flexibility and responsibility ... Enterprises have the task ... to utilize and valorise

<sup>24</sup> Claude Benoit, Ewa Bogalska-Martin, Paola Matrigali, Mario G.R. Pagliacci, Gabriela Boldureanu, Ina Croitoru, *op. cit.*, page 164.

<sup>25</sup> In Italian language we use the word “*imprenditorialità*” (for entrepreneurs) and “*imprenditorialità*” (for the best employees and workers).

<sup>26</sup> See: Alessandro Montrone, Mario G.R. Pagliacci, Valeria Ferretti, Francesca Martini, Annalisa Presilla, *Il potenziale creativo negli studenti e il fabbisogno innovativo nelle imprese*, AUR&S – Quadrimestrale Agenzia Umbria Ricerche 3–4/10, Perugia, 2010.

<sup>27</sup> The research concerned as Italian as Romanian students. The results of the comparative analysis of the two groups of students are available in: Elisabeta Jaba, Mihai Daniel Roman, Mario Pagliacci, Dana Serban, Christiana Brigitte Balan, Mircea Asandului, *Statistical Evaluation of the Students' Perception of Creativity*, International Conference on Education, Research and Innovation, ICERI 2008 Proceedings, Madrid, January, 15 2009.

in the best way these characteristics, addressing them towards the most useful business goals”<sup>28</sup>.

The research concluded that the majority of enterprises recognize that innovation is a fundamental factor for growth; technical and commercial jobs are considered the most important for analysis and development of new products and their marketing. These activities are considered fundamental for innovation, taking in account that 73% of interviewees declare “... strong connection between innovation and competitiveness ...”<sup>29</sup>.

The research put in evidence the existence of a potential matching between creative skills of students (as future managers) and innovative needs of enterprises. Nevertheless some obstacles operate against the effectiveness of the matching: “... internal and external factors can hinder or limit innovative processes. Author Quinn (1985) synthesizes the main internal problems hindering creativity in enterprise organization: *isolation of management, intolerance towards fanatics (enthusiastic people), horizon of short term, accounting (procedures of costs imputation to innovative projects), excess of budgeting and autocracy, insufficient incentives*.

Additional factors exist ... half of enterprises and more declare that a great obstacle for innovation is caused by insufficient financial sources; about 1/3 interviewers underline limits in culture of employees and in structure of organization ...”<sup>30</sup>.

We can observe that similar questions are emerging by the REDI index survey, especially about the quality of Human Capital.

In addition it is important to underline that the research conducted by Laboratorio Athena – localized in the Center of Italy – evidenced that “*a great obstacle for innovation is caused by insufficient financial sources*”; actually also the REDI index investigation shows that Centre of Italy obtains low points in Financing, in comparison to the other most performing Italian regions: North-West and North-East.

Finally, it is reasonable to affirm that financial factors are influent in developing innovative projects, but they are not determinant. At least, they are not more determinant than quality of human capital and capacity to built and activate good collaborative networking; in fact these two factors play a strategic role as for valorizing the characteristics of the single enterprise, as for the development of the whole economic and social system.

According to this perception, it is necessary that financial operators address their financial support towards the enterprises, taking in account assets and

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<sup>28</sup> Alessandro Montrone, Mario G.R. Pagliacci, Valeria Ferretti, Francesca Martini, Annalisa Presilla, *op. cit*, pages 489–490.

<sup>29</sup> Alessandro Montrone, Mario G.R. Pagliacci, Valeria Ferretti, Francesca Martini, Annalisa Presilla, *op. cit*, pages 500–501.

<sup>30</sup> Alessandro Montrone, Mario G.R. Pagliacci, Valeria Ferretti, Francesca Martini, Annalisa Presilla, *op. cit*, page 502.

investments in Human Capital and Networking especially<sup>31</sup>. Financial system *must* become able to achieve the capacity of analyzing merit of credit on the basis of significant characteristics of enterprises (especially intangible assets) rather than tangible assets only<sup>32</sup>.

Banks and other financial operators (especially venture capitalist and investment funds) suffer for scarcer cultural and organizing assets dedicated to the assessment of enterprise's merit of credit, especially in case of SMEs and start-ups. It is a lack of business intelligence as well as a resistance of financial operators in accepting to cooperate together enterprises on field, rather than to close in the niche of sophisticated formal models, for calculating a lot of ratios on the basis of the balance sheet.

***Problematic of Process and Product Innovation, as well as quality of Human Capital concerns as enterprises as banks and it needs conclusive strategies assumed by entrepreneurial and institutional stakeholders.***

### **Final conclusion**

Authors of REDI index elaborated a complex pyramidal system for measuring entrepreneurship in territories. As well as any other measuring procedure, it is not without gaps; nevertheless the survey about 125 European regions represents an useful theme of meditation.

We utilized the survey for reflecting about Italian entrepreneurial situation, in comparison with some European regions.

The survey based on REDI index, as well as other analysis, put in evidence that Italian-System (concerning entrepreneurship and new enterprise creation) is positioned near the last places in the ranking of European regions. Nevertheless, some on field researches indicate that good potentialities exist in population, especially in young people, and they ***are waiting*** for being valorised.

***BUT, this is the crucial point! Good potentialities are waiting. They are waiting for what? Are waiting for someone or something coming outside?***

Unfortunately this is the most grave and pernicious constraint: Italian people is waiting for a redeemer<sup>33</sup>, who is not coming and it is better he will not come, because – otherwise – he will be a new master or a new tyrant, as in the past.

<sup>31</sup> As well as additional factors analyzed by REDI index.

<sup>32</sup> The architecture of an original model for evaluating knowledge-based enterprises on the basis of intangible and tangible assets is presented in: Mario Pagliacci-Pamela Terenziani, *Valutazione delle imprese knowledge-based e Basilea 2*, Amministrazione & Finanza ORO, IPSOA, Milano, 2007.

<sup>33</sup> Luca Ricolfi writes: "... we, Italians, got the conviction that external world is the key of anything. ... Today we have the idea that not only our problems, but our safety too can come exclusively outside". Ricolfi declares that his opinion was inspired by the book of L. Barzini jr., *Gli italiani*, Mondadori, Milano, 1965.

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