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Abstract

The technological innovation stands for a positive foundation in the values system evolution in a country. Once involved in the modernizing process, the Public Sector shows an ever growing interest in the Information Technology and the management methods able to guarantee a higher level in the services control, efficiency and quality, against increasingly restricting expenditure constraints. The development of these technologies goes under the label of e-government (or e-administration), terms referring to the employment of the modern ICT (Information and Communication Technologies), linked to the development of electronics and the Internet in the Public Administration modernization. Several studies have evidenced that innovation is able to influence the ethical model, so triggering a virtuous circle. With reference to the EU Countries Area, following a Business Administration approach, the final part of the paper aims to demonstrate an empirical correlation between these variables.

Keywords: Business Administration; Corporate Culture, Social Responsibility; Government Policy and Regulation.

1 – Introduction

The aim and the scope of this research is to investigate - by a Business Economics approach - the potential correlation between two clusters (or variables): innovation and ethical behaviors related to the life standards in a country. The first cluster (innovation) includes Information Communication Technologies (ICT), Research & Development Expenditure, Education Investment, (etc.); while the second one (ethical behaviors) contains elements such as ethical values, the observance of the law, education, meritocracy, (etc.).

In the last years Business Economics science has tried to find a connecting link between the two variables (innovation and ethical behavior) and the economic continuity profile that can be summarized as follows: continuity concept of accounting is strongly oriented to innovation and this one depends on the ethical shared model (Christensen, 2002; Barzelay, 2000).

In the public sector management it is necessary to introduce the related concepts of e-government and e-governance (or e-democracy) to improve the ethical model by innovation (Northrop, 2002). The concept of e-government (or e-administration) is referred to the use of modern Information and Communication Technologies (ICT) linked to the development of electronics and the Internet in the modernization process of the Public Administration (Rahm, 1999; Hood, 1983). The different processes of e-government may be analyzed with reference to the various models, that the Public Institution may adopt during the modernization process of the structure (Layne et al., 2001; Reschenthaler et al., 1996). The different e-government models are:

- G2C model (Government to Citizen model): this model concerns the activities carried out by the Public Institution towards citizens (e.g. to build Institutional Portal Web and to provide Internet on line services such as the presentation of the Individual Tax Return in electronic format, or the application of electronic documents by the Registry Offices, etc.).
- G2B model (Government to Business model): this model concerns the activities carried out by the Public Institution towards business companies (e.g. to provide Internet on line services such as the presentation – in electronic format – of the following documents: Income Tax Return, Annual Report, etc).
- B2G model (Business to Government model): this model concerns the activities carried out by the Public Institution towards external supplier (e.g. e-procurement activities, e-auctions on line, etc.).
- G2E model (Government to Employees model): this model concerns the activities carried out by the Public Institution towards employees (e.g. to provide Internet on line services such as e-learning activi-

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ties).

- G2G model (Government to Government model): this model concerns the activities carried out by the Public Institution towards other Domestic Public Institution (electronic integration between several Departments or between Central and Local Public Institution) or towards other International or Foreign Public Institutions (e.g. intelligence activities, International Cooperation actions, etc.) (Heeks, 1999).

The development of the e-government processes (conditioning processes or causes) determines an improvement in the governance processes of the Public Institution that – using highly technological solutions – now called e-governance processes (conditioned processes or effects).

Consequently, the e-governance is the second aspect of technological innovation applied to Public Administration processes (Kettl, 2000; Aucoin, 1990): that is to say the possibilities to improve of the democratic participation processes offered by the new technologies (Milward et al., 1996; Pollifroni, 2003).

These e-governance processes [also called digital democracy (or e-Democracy)] include, e.g.:

- direct participation of the employees in the internal decision of the Public Institution: these processes influence the internal governance with activities, e.g., of internal electronic poll, also called e-Decision;
- direct participation of the citizens in the political choices: these processes influence the external governance of the Public Institution by e-Voting activities.

In recent years, in addition to the implementation and development of technological innovation, it has been developed a parallel process of attention to ethics, as a related discipline (Landsbergen et al., 2001); some studies have sought to show how innovation is able to influence the ethical behavior (Osborne et al., 1992).

With reference to the EU Countries Area in the following pages the paper tries to achieve this goal: measuring the possible correlation between the indicators that consider the level of innovation (independent variable) and ethical behaviors (dependent variable).

2 - Methodology

2.1 - *Path research of structural indicators*

To achieve the above mentioned goal, two baskets of indicators have been identified:

1. the first basket (basket of innovation indexes) is the Summary Innovation Index (SII), that is an arithmetic weighted average of 33 innovation indexes (data sources: European Com-mission/Eurostat);
2. the second basket (basket of ethical indexes) includes the following seven ethical indexes: 1) AEI Standard Ethics (data source: Agenzia Europea di Investimenti Standard Ethics); 2) Corruption Perception Index (CPI) (data source: Transparency International); 3) Control of corruption (data source: World Bank); 4)Voice and accountability(data source: World Bank); 5) Government effectiveness (data source: World Bank); 6) Political stability and absence of violence (data source: World Bank); and 7) Regulatory quality (data source: World Bank).

Each index has presented the following characteristics:

- availability for the period 2003-2007;
- applicability to almost all of the 27 European Union countries;
- representativeness of the country;
- possibility of comparison between them.

The research of the indicators was carried out by consulting the data sources offered by the following international bodies: European Commission, Eurostat, Transparency International, AEI (Agenzia Europea di Investimenti) Standard Ethics and World Bank: the indexes have a brief presentation in the following paragraphs.

2.2 - *Presentation of the basket of innovation indexes*

The basket of innovation indexes includes the Summary Innovation Index (SII), that is an arithmetic weighted average of 33 innovation indexes (data sources: European Commission/Eurostat). The indicator is composed of a basket of sub-indicators that vary over time.

This composite index measures the “innovation performance” through three innovation inputs [A1) drivers of innovation, A2) creation of new knowledge, A3) innovation and entrepreneurship] and two innovation outputs [B1) applications, B2) intellectual property]: the sub-indicators considered for the purposes of this study have the characteristics specified below.

A1) Drivers of innovation (7 indexes).

1. Graduates in science and engineering per 1,000 population (age group 20-29 years) - S & E graduates (% of population aged 20-29): this indicator brings together university graduates in science, physics, mathematics, statistics, computer science, engineering, architecture with the population under study, between 20 and 29 years (included).
2. Population with tertiary education in the field (age 25-64) - Population with tertiary education (% of population aged 25-64): this indicator brings together the number of people in age group 25-64 formed for the tertiary sector, with the entire population in that range of reference.
3. Rate of broadband penetration (number of broadband lines per 100 inhabitants) - Broad-band pe-

netration rate (number of broadband lines per 100 population): this indicator brings together the number of broadband lines with the total population.
4. Participation in a long training period (age 25-64) - Participation in life-long learning (% of population aged 25-64): this indicator brings together the people taking part in a long-term formation with the entire population within the age group 25-64.
5. Level of education achieved at a young age (% of population aged 20-24 years who have completed university) - Youth education attainment level (% of population aged 20-24 having completed at least upper secondary education): this indicator brings together people aged between 20 and 24 years who have completed university, with the entire population in that age range.
6. Internet Access or domestic - Level of Internet access of households: it indicates the ratio between the number of homes with Internet access and the total case.
7. Share or SMEs with a website - Level of Internet access of enterprises: it indicates the ratio between the number of SMEs with a website and the total number of SMEs.

A2) Creation of new knowledge (6 indexes).

1. Public expenditure on research and development (% of GDP) - Public R & D expenditures (% of GDP): this indicator has been extrapolated from the Eurostat database and shows the expenditure on research and the development level as a percentage of total GDP of each country of the European Union.
2. Private expenditure on research and development (% of GDP) - Business R & D expenditures (% of GDP): this indicator brings together all the expenditure in R & D performed by private sector (industry and services), with the GDP.
3. Share of R & D in medium-high and high technology (% of expenditure in R & D in Industry) - Share of medium-high-tech and high-tech R & D (% of manufacturing R & D expenditures): this indicator brings together the expenditure in R & D for high-and medium-high technology industry, with total spending on industrial R & D.
4. Proportion of firms that receive public funds for innovation - Share of enterprises receiving public funding for innovation: this indicator brings together a number of innovative firms that receive public funds, with the total number of firms.
5. University R & D financed by the private sector - University R & D expenditures financed by business sector: this indicator brings together the expenditure in R & D in universities, with total expenditure in R & D university, highlighting the degree of cooperation between public and private.
6. Share of venture capital investments in High-tech venture capital (% of venture capital invested): this indicator brings together the investment of venture capital in high-tech, with total investments of venture capital. Investment of venture capital in high-tech refers to the following areas: computer science, electronics, biotechnology, medicine, industrial automation and financial services.

A3) Innovation and entrepreneurship (6 indexes).

1. Industrial products and services, created in SMEs (% product and service): this indicator is the sum of all products / services created by SMEs in innovation activities (for businesses to innovate means both producing knowledge by them self, or producing it by collaborating with other firms), with the total number of products / services generated by SMEs.
2. Proportion of Early-stage venture capital (% of GDP): this indicator measures the dynamism in creating new business.
3. SMEs innovating in cooperation (% product and service): this indicator measures the flow of knowledge and between enterprises and between public research and enterprises.
4. Expenditure on innovation - Innovation expenditures (% of turnover): this indicator links total expenditure on innovation by all firms producing goods or providing services, with the total turnover generated from goods / services.
5. ICT expenditure (% GDP) - ICT expenditures (% of GDP): this indicator links the total expenditure in Information and Communication Technology (ICT), with the GDP.
6. Share of SMEs that do not change on a technical level - SMEs using non-technological change (% of SMEs) : this indicator considers the companies that do not implement technical improvements, new facilities and do not change the design of at least one product.

B1) Applications (7 indexes).

1. Employees in high-tech services (% of the workforce) - Employment in high - tech services (% of total workforce): this indicator brings together people working in areas of high-tech services (post and telecommunications, information technology including the development of software and services for R & D), with the total workforce in all industries and services.
2. Employed in the production of high-or medium-high technological content (% Labour Force) - Employment in medium/ high and high - tech manufacturing (% of total work-force): this indicator brings together the number of employees in the production of products of high or medium-high technological content (chemical, machinery, office equipment, telecommunications, precision instruments, automobiles, aerospace and other trans-port equipments) with the total workforce.

3. Exports of high technology products as a share of total exports: this indicator measures the competitiveness of the European Union in commercializing the results of research and development and innovations on international markets.
4. Sales of new products (% of sales) - Sales on new market products (% of turnover): this indicator brings together the revenue generated from the sales of new or improved products, with the total turnover.
5. Sales of new products for the firm, but not new to the market (% of turnover): this indicator brings together the revenue generated from new products considered by some businesses but not regarded as such by all the companies on the market, compared with the total turn-over.
6. Value-added in high-tech manufacturing (% of manufacturing value-added) : this indicator brings together the value added industrial production in five high-tech sectors (pharmacy, office equipment, telecommunications equipment, aerospace), with the total value added of the manufacturing sector.
7. SMEs Rate of volatility (sum of birth rate and death rate): this indicator links the rate of volatility, with the total number of SMEs; the rate of volatility interprets business dynamism and the contribution given to increase productivity. A high degree of volatility indicates a capability to adapt to changes.

B2) Intellectual property (7 indexes).

1. European habitants: this indicator brings together the number of high-tech patents validated by the European Patent Office, with the total population.
2. American habitants. (New) USPTO high-tech patents: this indicator is the U.S. equivalent, of the above described for Europe.
3. EPO patents: this indicator brings together the number of patents approved by the European Patent Office (EPO) with the total population.
4. USPTO patents per million Americans: this indicator brings together the number of patents approved by the U.S. Patent Office (USPTO) with the total population.
5. New Triadic patent families per million population: this indicator brings together the number of patents of the "triad", with the total population. A patent is the triad if and only if it was lodged with the European Patent Office (EPO), the Japanese Patent Office (JPO) and the U.S. Patent and Trademark Office (USPTO).
6. Number new domestic community trademarks (CTM) per million population: this indicator brings together the number of new trade marks, with the total population.
7. Number of (new) domestic community industrial designs per million population: this indicator brings together the new design community, with the total population.

2.3 - *Presentation of the basket of ethical indexes*

The second basket (basket of ethical indexes) includes the following seven ethical indexes: 1) AEI Standard Ethics (data source: Agenzia Europea di Investimenti Standard Ethics); 2) Corruption Perception Index (CPI) (data source: Transparency International); 3) Control of corruption (data source: World Bank); 4)Voice and accountability(data source: World Bank); 5) Government effectiveness (data source: World Bank); 6) Political stability and absence of violence (data source: World Bank); and 7) Regulatory quality (data source: World Bank).

1. AEI Standard Ethics (data source: Agenzia Europea di Investimenti Standard Ethics). Evaluations in terms of ethical Rating (national or regional) have as a reference the concept of Ethics and Social Responsibility issued according to parameters set by international bodies like the UN, OECD and the European Union. The final evaluations of the EEA Ethics Standards are expressed in the form of a rating to eight levels (EEE, EEE-, EE+, EE, EE-, E+, E, E-). The rating is the result of statistical and scientific activity carried out with the intention of photographing the world of business in relation to ethical principles promoted by large international organizations.
2. Corruption Perception Index (CPI) (data source: Transparency International). The index of perceptions of corruption in English Corruption Perception Index (CPI) is an indicator published annually since 1995 by Transparency International ordering the countries of the world on the basis of the level that the existence of corruption is perceived among public and political office.
3. Control of corruption (data source: World Bank). The indicator provided by the World Bank measures the ability of the political, legal and judicial systems to prevent and combat corruption.
4. Voice and accountability(data source: World Bank). This index provided by the World Bank measures the degree of civil liberties and political rights and influence of the effective population in the election of political leaders, so far, to the level of independence of the media from political pressure.
5. Government effectiveness (data source: World Bank). The indicator published by the World Bank that measures the quality of public services, the credibility of the Government on the measures to be implemented, the quality of the bureaucracy and the independence of civil servants from political pressure.
6. Political stability and absence of violence (data source: World Bank). The index published by the World Bank, which measures the perceptions of the likelihood that destabilize the government or be removed by unconstitutional or violent means, including domestic violence and terrorism.

7. Regulatory quality (data source: World Bank). Indicator published by the World Bank, which measures the ability of the government to formulating and implementing policies that can enable and promote the development of the private sector.

Tab. 1 – Calculation of the correlation between "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2003

Nations	**x**	**y**	**(x – mx)**	**(y – my)**	**$(x – mx)^2$**	**$(y – my)^2$**	**(x – mx) (y – my)**
Austria	47,00	81,67	8,48	9,46	71,94	89,42	80,20
Belgium	51,00	79,73	12,48	7,51	155,79	56,45	93,78
Bulgaria	20,00	51,29	-18,52	-20,92	342,94	437,77	387,46
Cyprus	29,00	67,90	-9,52	-4,32	90,60	18,63	41,09
Denmark	68,00	89,57	29,48	17,36	869,16	301,20	511,65
Estonia	35,00	69,27	-3,52	-2,95	12,38	8,70	10,38
Finland	69,00	89,67	30,48	17,46	929,12	304,73	532,10
France	48,00	74,56	9,48	2,34	89,90	5,49	22,21
Germany	59,00	79,33	20,48	7,11	419,49	50,60	145,70
Greece	26,00	63,43	-12,52	-8,78	156,71	77,16	109,97
Ireland	50,00	79,84	11,48	7,63	131,82	58,18	87,58
Italy	32,00	65,29	-6,52	-6,93	42,49	47,99	45,15
Leetonia	16,00	61,47	-22,52	-10,75	507,08	115,56	242,07
Latvia	23,00	64,53	-15,52	-7,68	240,82	59,03	119,23
Luxemburg	50,00	84,15	11,48	11,93	131,82	142,33	136,97
Malta	27,00	75,48	-11,52	3,26	132,68	10,65	-37,59
Netherlands	50,00	85,07	11,48	12,86	131,82	165,29	147,61
Poland	21,00	58,36	-17,52	-13,85	306,90	191,92	242,69
Portugal	21,00	73,23	-17,52	1,02	306,90	1,03	-17,79
United Kingdom	57,00	81,76	18,48	9,54	341,57	91,05	176,35
Czech Republic	32,00	63,49	-6,52	-8,73	42,49	76,16	56,89
Romania	16,00	45,98	-22,52	-26,24	507,08	688,39	590,82
Slovakia	23,00	60,22	-15,52	-12,00	240,82	143,91	186,17
Slovenia	32,00	68,43	-6,52	-3,78	42,49	14,31	24,66
Spain	32,00	75,27	-6,52	3,06	42,49	9,34	-19,92
Sweden	82,00	88,97	43,48	16,76	1890,64	280,73	728,53
Hungary	24,00	66,49	-14,52	-5,73	210,79	32,80	83,15
European Average	38,52	72,22	====	====	310,69	128,85	175,08
Correlation Index				0,88			

3 - Standardization original data

In order to compare these indexes, their values have been standardized, and traced back to a single scale in terms of cents: the process used is explained below.

1. Innovation Indicators. Summary Innovation Index (SII) Standardization was obtained by multiplying by 100 the original data, according to the following proportion:

Since the original: Given standardized (x) = 1:100 ;

2. Ethics Indicators.

- AEI Standard Ethics. Cents in the conversion of this quality indicator is obtained through the following conversion scale: EEE=100; EEE-= 85.71428571; EE + =71.42857143; EE=57.14285714; EE-=42.85714286; E +=28.57142857; E=14.28571429 and E-=0.
- Corruption Perception Index (CPI). The indicator in question is represented by a scale from 0 to 10, its conversion into cents was realized through the following proportion: since the original: Given standardized (x) = 10:100.

- Control of corruption. 4) Voice and accountability. 5) Government effectiveness. 6) Political stability and Absence of Violence. 7) Regulatory quality. The five indicators of the World Bank are expressed on a scale whose values range from -2.5 to +2.5. Cents in the conversion has been obtained through the following conversion scale: since normalized (x) = (as original + 2.5) * 20.

Tab. 2 – Calculation of the correlation between "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2004

Nations	**x**	**y**	**(x – mx)**	**(y – my)**	**$(x – mx)^2$**	**$(y – my)^2$**	**(x – mx) (y – my)**
Austria	46,00	82,36	7,63	10,46	58,21	109,43	79,81
Belgium	49,00	78,59	10,63	6,69	112,99	44,75	71,11
Bulgaria	21,00	52,01	-17,37	-19,89	301,73	395,60	345,49
Cyprus	29,00	65,40	-9,37	-6,50	87,80	42,22	60,89
Denmark	66,00	90,14	27,63	18,25	763,40	332,89	504,11
Estonia	34,00	69,77	-4,37	-2,13	19,10	4,54	9,31
Finland	68,00	89,76	29,63	17,86	877,91	319,01	529,21
France	48,00	75,33	9,63	3,43	92,73	11,78	33,05
Germany	59,00	79,73	20,63	7,83	425,58	61,35	161,58
Greece	26,00	62,80	-12,37	-9,09	153,03	82,70	112,50
Ireland	49,00	79,53	10,63	7,63	112,99	58,25	81,13
Italy	33,00	63,58	-5,37	-8,32	28,84	69,27	44,70
Leetonia	16,00	60,20	-22,37	-11,70	500,43	136,83	261,68
Latvia	24,00	63,30	-14,37	-8,60	206,51	73,92	123,55
Luxemburg	50,00	84,09	11,63	12,19	135,25	148,64	141,78
Malta	27,00	73,63	-11,37	1,74	129,29	3,01	-19,74
Netherlands	49,00	84,93	10,63	13,03	112,99	169,84	138,53
Poland	21,00	56,42	-17,37	-15,48	301,73	239,56	268,85
Portugal	24,00	71,75	-14,37	-0,15	206,51	0,02	2,17
United Kingdom	57,00	82,22	18,63	10,32	347,06	106,46	192,22
Czech Republic	33,00	62,72	-5,37	-9,18	28,84	84,27	49,30
Romania	15,00	46,55	-23,37	-25,35	546,17	642,47	592,37
Slovakia	22,00	60,73	-16,37	-11,16	267,99	124,62	182,75
Slovenia	34,00	68,40	-4,37	-3,50	19,10	12,23	15,29
Spain	31,00	74,27	-7,37	2,38	54,32	5,64	-17,51
Sweden	80,00	88,97	41,63	17,07	1733,03	291,51	710,78
Hungary	25,00	66,00	-13,37	-5,89	178,77	34,74	78,81
European Average	38,37	71,90	====	====	288,97	133,54	176,06
Correlation Index				0,90			

For achieving the aim and the scope of the research, the calculation of the correlation was obtained by the following indicators:

- the independent variable "Innovation": the indicator is calculated as a result of several sub-indicators and corresponds to the Summary Innovation Index;
- the dependent variable "Ethics": the data used is the value that results from the average of the basket composed of the seven indicators described above;
- the values that derives from the process of normalization of the original data bases.

In the following pages the research presents the tables "Calculation of correlation between ethical and technology variables - Years 2003, 2004, 2005, 2006 and 2007" (see tables: 1, 2, 3, 4 and 5).

Once completed these tables the correlation index has been calculated, separately for each year, using the Pearson index model. In the final pages of the paragraph the research presents the data results through a scatter graph for each year (see figures: 1, 2, 3, 4 and 5).

Tab. 3 – Calculation of the correlation between "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2005

Nations	**x**	**y**	**(x – mx)**	**(y – my)**	**$(x – mx)^2$**	**$(y – my)^2$**	**(x – mx) (y – my)**
Austria	48,00	82,10	9,44	10,96	89,20	120,06	103,48
Belgium	49,00	77,33	10,44	6,19	109,09	38,26	64,61
Bulgaria	20,00	52,09	-18,56	-19,05	344,31	362,93	353,50
Cyprus	30,00	66,07	-8,56	-5,08	73,20	25,78	43,44
Denmark	65,00	88,80	26,44	17,66	699,31	311,72	466,89
Estonia	35,00	69,50	-3,56	-1,64	12,64	2,70	5,85
Finland	65,00	88,87	26,44	17,73	699,31	314,30	468,82
France	48,00	75,44	9,44	4,30	89,20	18,49	40,61
Germany	59,00	80,22	20,44	9,07	417,98	82,29	185,46
Greece	26,00	61,98	-12,56	-9,17	157,64	84,08	115,13
Ireland	50,00	80,50	11,44	9,36	130,98	87,55	107,09
Italy	33,00	60,13	-5,56	-11,01	30,86	121,22	61,17
Leetonia	17,00	60,77	-21,56	-10,38	464,64	107,70	223,70
Latvia	24,00	63,43	-14,56	-7,71	211,86	59,46	112,24
Luxemburg	53,00	82,63	14,44	11,49	208,64	131,97	165,93
Malta	28,00	71,77	-10,56	0,62	111,42	0,39	-6,57
Netherlands	49,00	83,64	10,44	12,50	109,09	156,25	130,55
Poland	22,00	54,69	-16,56	-16,45	274,09	270,63	272,35
Portugal	23,00	71,60	-15,56	0,46	241,98	0,21	-7,14
United Kingdom	56,00	80,27	17,44	9,13	304,31	83,33	159,24
Czech Republic	33,00	61,96	-5,56	-9,18	30,86	84,30	51,01
Romania	16,00	47,07	-22,56	-24,08	508,75	579,82	543,12
Slovakia	23,00	61,89	-15,56	-9,25	241,98	85,62	143,93
Slovenia	34,00	67,67	-4,56	-3,48	20,75	12,09	15,84
Spain	32,00	73,67	-6,56	2,53	42,98	6,39	-16,58
Sweden	78,00	87,03	39,44	15,88	1555,86	252,31	626,54
Hungary	25,00	63,82	-13,56	-7,32	183,75	53,65	99,29
European Average	38,56	71,14	====	====	272,77	127,91	167,76
Correlation Index				0,90			

Tab. 4 – Calculation of the correlation between "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2006

Nations	**x**	**y**	**(x – mx)**	**(y – my)**	**$(x – mx)^2$**	**$(y – my)^2$**	**(x – mx) (y – my)**
Austria	48,00	82,24	8,85	11,03	78,36	121,74	97,67
Belgium	48,00	77,67	8,85	6,46	78,36	41,76	57,20
Bulgaria	22,00	52,09	-17,15	-19,12	294,06	365,46	327,82
Cyprus	32,00	67,40	-7,15	-3,81	51,10	14,52	27,24
Denmark	64,00	89,37	24,85	18,16	617,61	329,82	451,33
Estonia	37,00	70,73	-2,15	-0,48	4,61	0,23	1,03
Finland	67,00	88,79	27,85	17,58	775,73	308,94	489,54
France	48,00	74,84	8,85	3,63	78,36	13,20	32,17
Germany	59,00	80,24	19,85	9,03	394,10	81,61	179,34
Greece	25,00	61,52	-14,15	-9,69	200,17	93,95	137,13
Ireland	49,00	80,42	9,85	9,21	97,06	84,74	90,69
Italy	33,00	58,75	-6,15	-12,46	37,80	155,30	76,62
Leetonia	18,00	62,40	-21,15	-8,81	447,24	77,63	186,33
Latvia	26,00	62,47	-13,15	-8,74	172,87	76,45	114,97
Luxemburg	57,00	82,86	17,85	11,65	318,69	135,73	207,98
Malta	29,00	72,57	-10,15	1,36	102,98	1,84	-13,76
Netherlands	48,00	83,27	8,85	12,06	78,36	145,50	106,77
Poland	23,00	54,21	-16,15	-17,00	260,76	289,09	274,56
Portugal	25,00	70,00	-14,15	-1,21	200,17	1,46	17,08
United Kingdom	55,00	82,04	15,85	10,83	251,28	117,37	171,74
Czech Republic	34,00	62,88	-5,15	-8,33	26,50	69,45	42,90
Romania	17,00	48,67	-22,15	-22,55	490,54	508,30	499,34
Slovakia	24,00	61,55	-15,15	-9,66	229,47	93,35	146,36
Slovenia	36,00	68,97	-3,15	-2,24	9,91	5,03	7,06
Spain	32,00	70,36	-7,15	-0,85	51,10	0,73	6,09
Sweden	76,00	87,17	36,85	15,96	1358,06	254,75	588,19
Hungary	25,00	64,02	-14,15	-7,19	200,17	51,70	101,73
European Average	39,15	71,21	====	====	255,76	127,39	163,89
Correlation Index				0,91			

Tab. 5 – Calculation of the correlation between "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2007

Nations	**x**	**y**	**(x – mx)**	**(y – my)**	**$(x – mx)^2$**	**$(y – my)^2$**	**(x – mx) (y – my)**
Austria	48,00	82,36	9,00	11,01	81,00	121,15	99,06
Belgium	47,00	77,27	8,00	5,92	64,00	35,06	47,37
Bulgaria	23,00	52,15	-16,00	-19,20	256,00	368,69	307,22
Cyprus	33,00	67,23	-6,00	-4,12	36,00	16,96	24,71
Denmark	61,00	89,34	22,00	17,99	484,00	323,67	395,80
Estonia	37,00	70,37	-2,00	-0,99	4,00	0,97	1,97
Finland	64,00	87,44	25,00	16,09	625,00	258,96	402,31
France	47,00	74,24	8,00	2,89	64,00	8,37	23,14
Germany	59,00	80,04	20,00	8,69	400,00	75,56	173,85
Greece	26,00	61,12	-13,00	-10,23	169,00	104,74	133,04
Ireland	49,00	80,99	10,00	9,64	100,00	92,84	96,35
Italy	33,00	60,31	-6,00	-11,05	36,00	122,02	66,28
Leetonia	19,00	58,67	-20,00	-12,69	400,00	160,94	253,72
Latvia	27,00	62,37	-12,00	-8,99	144,00	80,73	107,82
Luxemburg	53,00	83,69	14,00	12,34	196,00	152,21	172,72
Malta	29,00	72,27	-10,00	0,91	100,00	0,84	-9,15
Netherlands	48,00	84,22	9,00	12,86	81,00	165,48	115,77
Poland	24,00	59,40	-15,00	-11,95	225,00	142,76	179,23
Portugal	25,00	69,75	-14,00	-1,61	196,00	2,58	22,48
United Kingdom	57,00	81,27	18,00	9,92	324,00	98,42	178,58
Czech Republic	36,00	62,79	-3,00	-8,56	9,00	73,28	25,68
Romania	18,00	49,58	-21,00	-21,77	441,00	474,05	457,23
Slovakia	25,00	62,16	-14,00	-9,19	196,00	84,44	128,65
Slovenia	35,00	68,93	-4,00	-2,42	16,00	5,85	9,67
Spain	31,00	70,10	-8,00	-1,25	64,00	1,56	10,00
Sweden	73,00	88,43	34,00	17,08	1156,00	291,61	580,61
Hungary	26,00	62,99	-13,00	-8,36	169,00	69,90	108,69
European Average	39,00	71,35	====	====	223,56	123,47	152,33
Correlation Index				0,92			

Fig. 1 – Scatter chart and trend line concerning the two variables "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2003

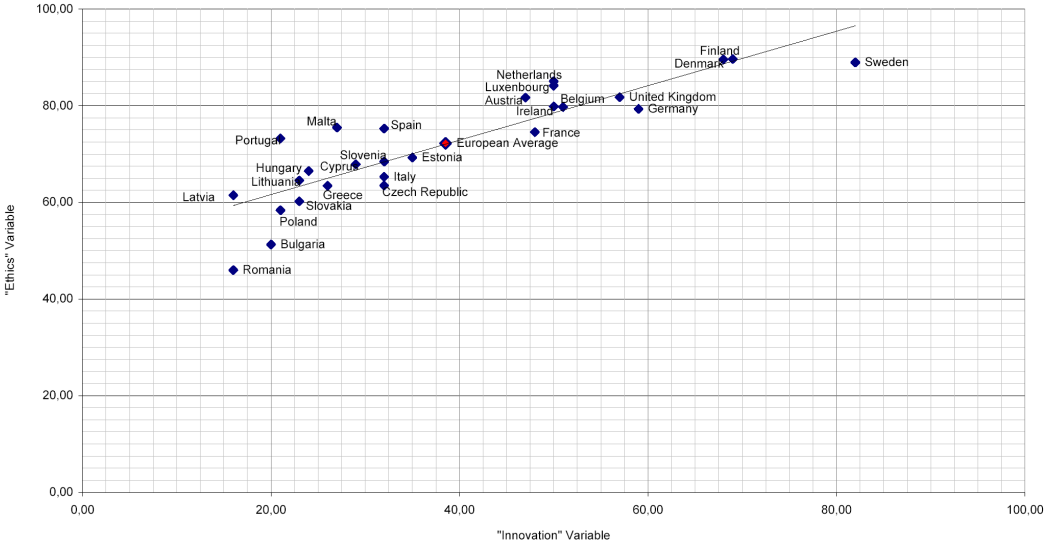


Fig. 2 – Scatter chart and trend line concerning the two variables "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2004

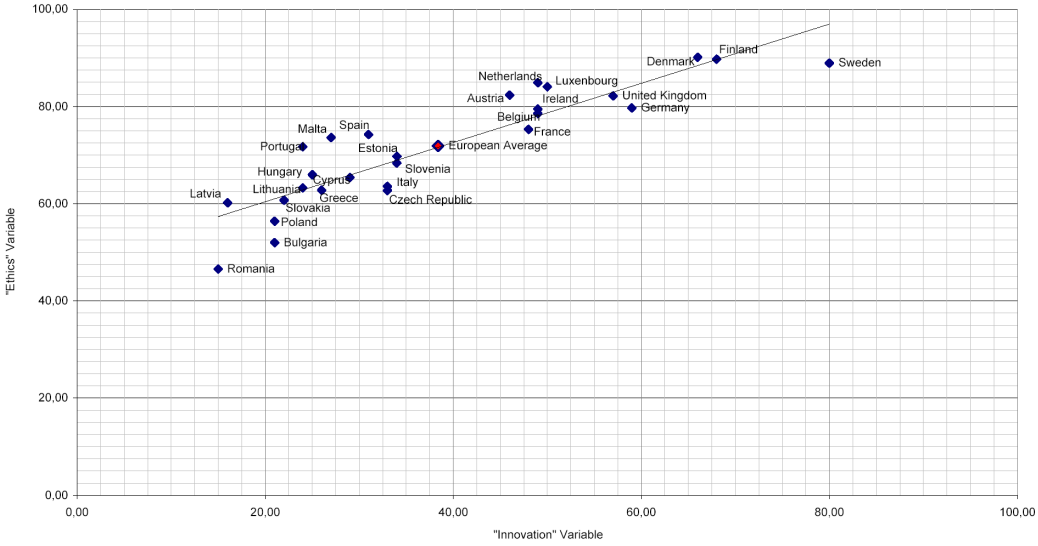


Fig. 3 – Scatter chart and trend line concerning the two variables "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2005

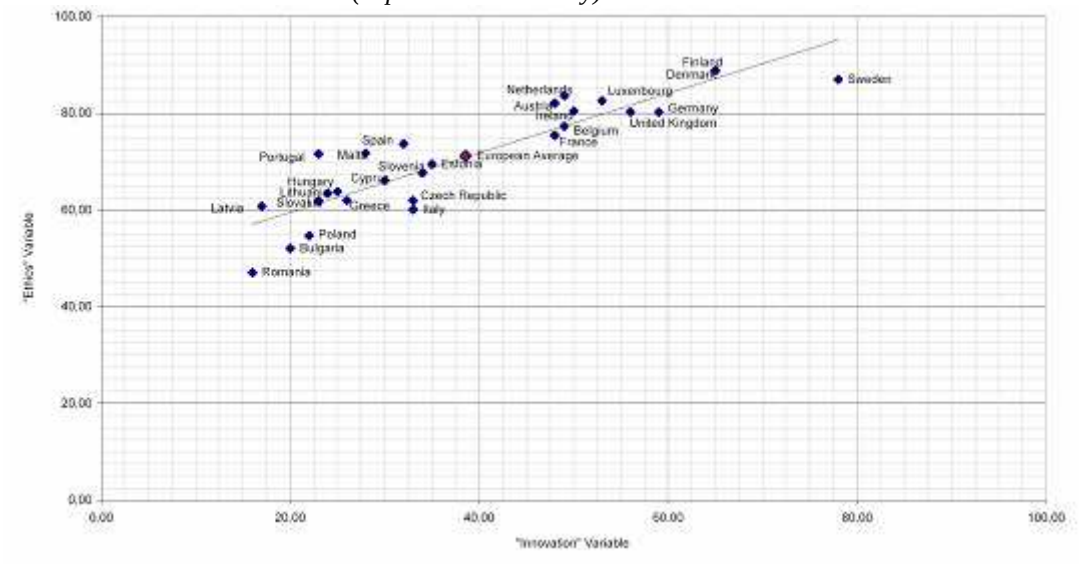


Fig. 4 – Scatter chart and trend line concerning the two variables "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2006

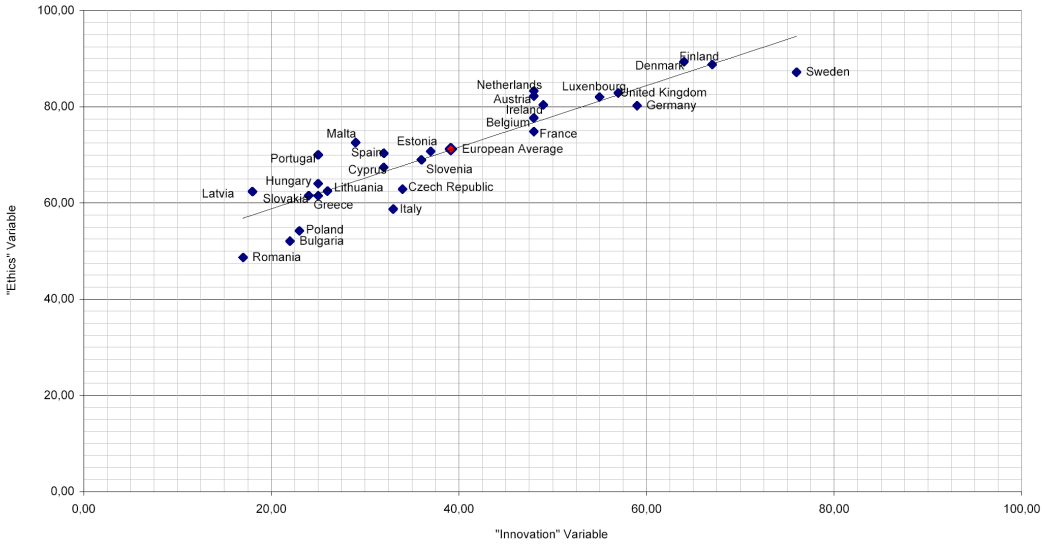
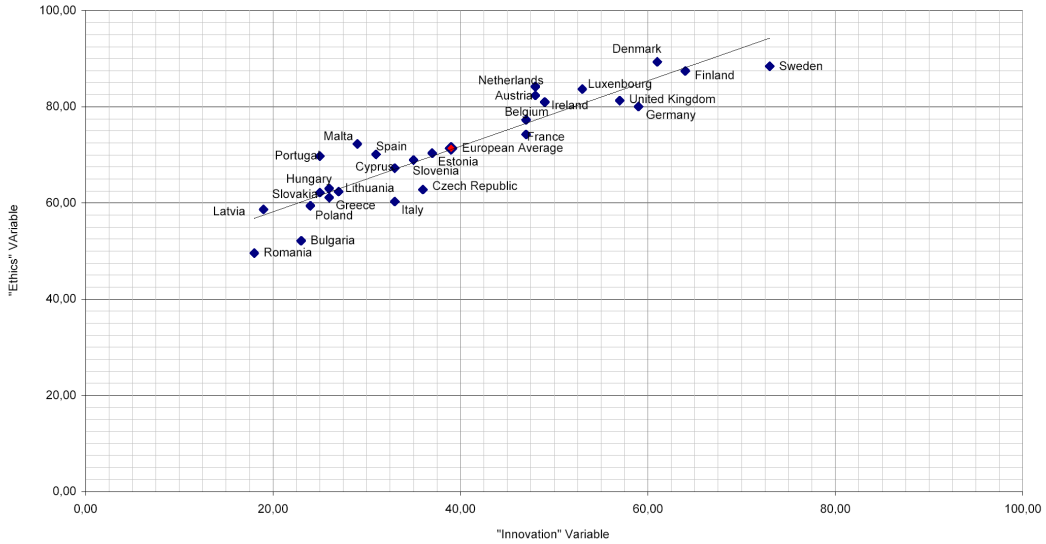


Fig. 5 – Scatter chart and trend line concerning the two variables "Innovation" (independent variable: x) and "Ethics" (dependent variable: y) – Year: 2007



4 - Research results and final conclusions

The graphs shown in the previous section show that the countries located inside the up and right quadrant have a high level of ethics in relation to a high level of innovation achieved, while those located in the lower left are distinguished by the opposite situation (low propensity to innovation related to weak ethical performance): the location to "cloud" of countries on the straight line interpolation, allows to prove the existence of a positive linear relationship between the two variables taken into consideration.

The contribution of this research has had, as prerequisite, the identification in the current process of improvement and development of governance models of the crucial role of the underlying share represented by the reference model of values, measured by ethical parameters (Freeman, 1984).

Looking at the Italian model the governance of the public institutions has been the subject of several actions that have often led to inefficient and inadequate results (the same problem concerns the private business sector): the question then arises spontaneously from the reasoning outlined here and if there are other ways, in addition to legislation, for the improvement of these imbalances: the alternative way followed in the present study was aimed at measuring the level of innovation.

According to the empirical evidence outlined above it was possible to measure a significant positive correlation (ranging between 0.88 and 0.92, for the five years 2003-2007) between the values and ethical behavior, and implementation of variable "innovation" of a Country.

The results of the research have shown that in countries where the economy is more oriented to innovative practices (such as, for example, Sweden, Finland and Denmark) it is possible to find the highest ethical standards.

These results lead us to theorize new profiles of analysis applicable to the concept of "business innovation", such as, e.g.:

- the profile of innovation financing, which should be systematic, stable and continuous (strategic view of the resource in the long term) (Kim et al., 1994),
- system making (synergy in knowledge management, for example, between enterprises located in the same economic sector or between subjects located both in the public sector and the private one) (Rocheleau et al., 2002; Bajjaly, 1998).

In conclusion it is possible to say that implementing innovation (defined above), may represent a right way for the growth of the ethical shared model; environmental sustainability and social responsibility are the areas of contact between the two variables considered and the durability depends on them: innovation and ethics are thus highly correlated to each other, forming at the same time, essential "driver" for the durability of the public institution.

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