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**Article**

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# **E-Government towards Transparency: a comparative analysis applied to the Italian Public Sector**

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**Abstract:** Recently, the issues concerning the complex area of the performance assessment applied to the Public Institutions have shown a continuing and growing interest: these processes also have a valid support in the development of ICT applications inside the Public Sector, also referred as Public Management Information Systems (PMIS). Moreover, the analysis of the quality of websites can have a particular significance that is the ability to respond appropriately to the needs of citizens and enterprises, profoundly changed by the present global financial crisis. The aim of this research is to explore how the quality of websites (and related online services provided by the Public Institutions) can also be considered a valid support to improve the administrative transparency. The research has been conducted through a comparative assessment applied to two sectors of the Italian Public Administration: the field of Fiscal Agencies and that relating to the municipalities, capital cities of the Italian Regions.

**Keywords:** Business Ethics, IT Management, Business Economics

**JEL codes:** M14, M15, M21

## **1. Introduction**

The object of the present study is the analysis of the correlation between the assessment of the quality of websites (and related services provided online by the Public Institutions) and the evaluation of the administrative transparency. The

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choice of paper to study these variables depends upon the following hypothesis: the development of the quality of websites (conditioning processes or causes) can determine an improvement in the administrative transparency of the Public Institution (conditioned processes or effects).

More generally, this hypothesis can emphasize a specific aspect concerning the e-government, or, in other words, it is possible to observe a biphasic profile emerging from these processes: on the one hand these processes represent a right way to introduce efficiency and effectiveness in the Public Sector management; on the other hand the e-government improvements can have a useful effect on the ethical shared behaviors and on the administrative transparency (Pollifroni, 2010).

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 modernisation process of the Public Administration (Pollifroni, 2003), in adherence to the paradigm of New Public Management (NPM) (Aucoin, 1990; Barzelay, 2001; Dunleavy *et al.*, 1994; Gruening, 2001; Hood, 1991, 1995; Pollit *et al.*, 2004, 2007).

The review of the New Public Management (NPM) paradigm provides the development of Public Administration through a change of the administration (Osborne *et al.*, 1992) by the development of the e-government processes (conditioning processes or causes) that determines an improvement in the democratic governance processes (Haque, 2001): these reflex effects are called e-governance processes (conditioned processes or effects) and include many additional aspects, such as those of e-participation, e-inclusion, e-accessibility, etc. (Stiglitz, 2002); in other words, these aspects represent a significant partition of the new administrative transparency derived by the present global public management revolution (Kettl, 2000). This scenario is:

“(...) the new context in which Public Administrations operate, developing on the parameters that sustain efficiency, performance and transparency to facilitate access to successful governance and implementation of innovative solutions for interoperability, provided by information and communication technologies and translated as advantages for all the actors involved (...)” (Năstase *et al.*, 2009: 408).

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 its structure. From this point of view, the international literature has now consolidated the evidence of the following models of e-government: G2C (Government to Citizen model), G2B (Government to Business model), B2G (Business to Government model), G2E (Government to Employees model) and G2G (Government to Government model) (Pollifroni 2008).

What has been reported here allows us to state that the processes of e-government – and the related models – can be considered the application of the Management Information System (MIS) inside the Public Sector (Caudle *et al.*, 1991; Bretschneider, 1990): this particular partition of the MIS has been called in the international literature as “Public Management Information Systems” (PMIS) (Bozeman *et al.*, 1986; Heeks, 1998) and is the scientific discipline of reference of the present study.

This work covers the complex topic of the Public Administration performance measurement concerning the new applications on e-government (Torres *et al.*, 2005): particularly, the indication is referred to the websites quality as representative part of the ability to answer adequately to the needs of citizens and companies, needs that change over time (Cornero, 2012; Georgescu *et al.*, 2008). The underlying question to search is the following issue: is it possible to identify a connection between the assessments of the PA’s websites quality (Chiou *et al.*, 2010; Dragulanescu, 2002) and the evaluation of the administrative transparency derivable from the availability of information and services provided online?

The overall aim of the study is to identify the PMIS as a tool to jointly optimize both operational efficiency, that administrative transparency: two issues two issues of great relevance in the current policy of the European Community. Following this approach the PMIS can be seen both as a mechanism for reducing the public spending, both as a means for the improvement of public ethics.

## **2. The areas covered by the study, research methodology and final results**

The research has been conducted through a comparative assessment of the two sectors of the Italian Public Administration: the area of the Italian Fiscal Agencies [Case (A)] and that relating to the municipalities, capital cities of the Italian Regions [Case (B)].

The first universe under study concerns the Italian Fiscal Agencies; they are: 1. the Revenue Agency; 2. the Customs Agency and 3. The Public Land Agency. A brief presentation of the Italian Fiscal Agencies is provided by the following information available on the Minister of Economy and Finance’ website:

“(…) The Revenue Agency, operating since January 1<sup>st</sup>, 2001, is one of the four fiscal agencies emerging from the Revenue Authorities’ reorganization which was carried out pursuant to Legislative Decree no. 300 of 1999. The revenue-related functions assigned to this agency include the following main activities: giving information and assistance to taxpayers, including via electronic means and services

to facilitate typical activities undertaken when making tax payments; tax assessments, checking for errors and tax evasion to fight tax avoidance and evasion (the Agency's core business), including with the help of the Italian Finance Police; managing tax disputes before Tax Commissions.

The Customs Agency is engaged in the administration and collection of customs duties, in handling custom duty disputes and internal taxation of international trade, in the application of excise duty on production and consumption. It works closely with European bodies within the framework of harmonization and European unification processes. The Agency is responsible for all those functions currently performed by the Customs Department of the Ministry of Finance, including those exercised under European Union treaties or other instruments and international agreements.

The Public Land Agency is one of Italy's four fiscal agencies (the other three being the Italian Revenue Agency, the Agency for the Territory, the Customs Agency) set up as part of the Ministry's reorganization under Legislative Decree no. 300 of 1999. Under Legislative Decree no. 173/03, this Agency had the form of a for-profit public entity. (...) The Public Land Agency, therefore, pursues public interest objectives by adopting principles of cost-efficiency and economic and social value-creation criteria in managing the state's real estate assets. The Agency also manages confiscated criminal assets (...)”<sup>1</sup>.

The second universe under study concerns the municipalities, capital cities of the Italian Regions (see Table 1). The research was carried out through the analysis of the two entire universes of reference of the statistical population under study: the full universe of the Italian Fiscal Agencies and that relating to the municipalities, capital cities of the Italian Regions. For this reason the profile of the research did not require further elaboration concerning the statistical inference: the research data collected refer to the date of November 30<sup>th</sup>, 2013: it is reported that a previous version of this study concerning the capital cities of the Italian Regions, with a different use of the variables, has been published on December 2014 (Pollifroni, 2014).

- A) The assessment of websites (in terms of technological level and related services provided online by the Public Institutions) [variable (X)]. The variable (X) can be represented by the following function  $X = f(X_\alpha, X_\beta)$ , where: X = is the composite assessment of the websites;  $X_\alpha$  = is the sub-assessment concerning the technological level and  $X_\beta$  = is the sub-assessment concerning the related services provided online.

**Table 1. Economic and statistical summary on the capital cities and the  
corresponding Italian Regions**

<b>Capital cities of the Italian Regions</b>	<b>Local resident population at December 31<sup>st</sup>, 2012</b>	<b>Corresponding Italian Regions</b>	<b>Regional Population density per km<sup>2</sup></b>	<b>Regional Gross Domestic Product per person (Euro/1.000, Fiscal Year 2012)</b>
L'Aquila	66,905	Abruzzo	121.95	22.89
Potenza	66,698	Basilicata	57.65	18.25
Catanzaro	89,319	Calabria	129.85	17.00
Naples	961,106	Campania	424.55	16.55
Bologna	371,151	Emilia-R.	195.02	32.19
Trieste	201,814	Friuli-V.G.	155.48	29.46
Rome	2,614,263	Lazio	322.42	30.50
Genoa	584,644	Liguria	288.69	28.15
Milan	1,240,173	Lombardy	410.45	33.84
Ancona	100,465	Marche	164.98	26.01
Campobasso	48,675	Molise	70.61	20.38
Turin	869,312	Piedmont	172.19	28.56
Bari	315,408	Puglia	209.26	17.36
Cagliari	149,343	Sardinia	68.09	20.13
Palermo	656,829	Sicily	194.46	16.98
Trento	114,063	Trentino	76.43	34.05
Florence	357,318	Tuscany	160.60	28.68
Perugia	162,097	Umbria	104.81	23.95
Aosta	34,029	Vallée d'Aoste	39.18	34.75
Venice	260,856	Veneto	265.33	30.03

(Source: Italian National Institute of Statistics – ISTAT)

The methodological path followed in the survey is explained in the following pages.

*The sub-assessment concerning the technological level ( $X_a$ )*

The sub-assessment concerning the technological level ( $X_a$ ) was performed through the use of the instrument called “W3C Markup Validation Service” (or W3C-MVS, or Markup Validator), developed by the World Wide Web Consortium (W3C). Led by Web inventor Tim Berners-Lee and CEO Jeffrey Jaffe, W3C’s mission is to lead the Web to its full potential (for more information see at: <http://www.w3.org/Consortium/>). The Markup Validator is:

“(…)a free service by W3C that helps check the validity of Web documents. Most Web documents are written using markup languages, such as HTML or XHTML. (...) The act of checking a document against these constraints is called validation, and this is what the Markup Validator does. (...)”<sup>2</sup>).

The W3C-MVS provides a qualitative assessment expressed on the following four levels: 1) AAA, maximum level; 2) AA, medium level; 3) A, minimum level; and 4) NE, not evaluable level: every single qualitative assessment has been subsequently converted into a quantitative score expressed in 10/10.

The sub-assessment concerning the related services provided online ( $X_{\beta}$ ).

The evaluation of the web services provided on line has used the tool called Radar Web PA [or PA (Public Administration) Web Radar]: the tool is provided by Fornez PA, the center services, assistance, studies and training for the modernization of the Italian PA (Public Administration) – that operates nationally and responds to the Department of Public Administration of the Presidency of the Council of Ministers. The Radar Web PA is:

“(…) is a measurement instrument offered by the Public Administrations in order to observe the website services with critical aspects on which it is appropriate to develop improving actions to keep growing the website quality level of the services provided. (...)”.<sup>3</sup>

Every single variable of the rating model is organized according to a value scale from zero to five, with different final scores for the two universes under study: for the area of the Italian Fiscal Agencies, the single score (concerning 18 variables observed) is compared to the maximum obtainable value equals to 90 (the maximum score is equal to 5 times 18); while for the to the municipalities, capital cities of the Italian Regions, the single score (concerning 22 variables observed) is compared to the maximum obtainable value equals to 110 (the maximum score is equal to 5 times 22).

The next step of the methodological path has regarded the normalization of the obtained results in the same scale used in the previous assessment: so, also in this case, the single quantitative assessment has been subsequently converted into a quantitative score expressed in 10/10.

*The overall assessment of the variable (X)*

The final assessment of the variable (X) – concerning the composite assessment of the two sub-evaluations – has been expressed as the simple arithmetic average of the two sub-variables previously measured in 10/10. The final score of the variable (X) concerning the single unit (Agency or Municipality) (i) may be expressed in the following formula:

$$X_i = \mu_i = \sum (X_{\alpha} : X_{\beta})_i / 2.$$

The final results of these assessments are shown in the Tables 2.

B) The assessment of the administrative transparency [variable (Y)].

The assessment concerning the administrative transparency (Y) was achieved through the instrument of the Compass of Transparency (or CoT), a tool developed by the Ministry for Public Administration and Simplification. The Compass of Transparency is:

“(...) is an automated online instrument that gives the citizens the possibility to monitor, in real time, the implementation of all the data and information requirements imposed by Italian law on the websites of Public Administrations. The aim is to support the government, through the direct involvement of citizens in the continuous improvement of the quality of online and digital services. (...)”.<sup>4</sup>

Every single variable of the rating model is organized according to a different scale score for the two universes under study: 64 points has been the maximum obtainable value for the area of the Italian Fiscal Agencies; while for the municipalities, capital cities of the Italian Regions, the maximum obtainable value has been 65.

Subsequently the intermediate scores has been converted into a final scale expressed in 10/10: the results of these assessments are shown in the Table 3, while the Table 4 points out the registered values for the two variables and the final step concerns the evaluation of the correlation indexes. The empirical results obtained will be discussed in the following paragraph.

**Table 2. The assessment concerning the variable (X)**

Cases study	( $x_a$ ) Assessment made by W3C-MVS	( $x_a$ ) Assessment made by W3C-MVS expressed in 10/10	( $x_b$ ) Assessment made by Radar Web PA	( $x_b$ ) Assessment made by Radar Web PA expressed in 10/10	( $x_i$ ) Final score
Case (A): Italian Fiscal Agencies					
Revenue Agency	AA	6.6667	30	3.3333	5.0000
Customs Agency	AAA	10.0000	30	3.3333	6.6667
Public Land Agency	AA	6.6667	26	2.8889	4.7778
===	===	===	===	===	===
Average	===	7.7778	===	3.1852	5.4815
Median	===	6.6667	===	3.3333	5.0000
Modal	===	6.6667	===	3.3333	NA
Std.	===	1.9245	===	0.2566	1.0324
Deviation					
Minimum	===	6.6667	===	2.8889	4.7778



Cases study	( $x_{\alpha}$ ) Assessment made by W3C-MVS	( $x_{\alpha}$ ) Assessment made by W3C-MVS expressed in 10/10	( $x_{\beta}$ ) Assessment made by Radar Web PA	( $x_{\beta}$ ) Assessment made by Radar Web PA expressed in 10/10	( $x_i$ ) Final score
Maximun	===	10.0000	===	3.3333	6.6667
Case (B): Capital cities of the Italian Regions					
Ancona	AA	6.6667	42	3.8182	5.2424
Aosta	AA	6.6667	64	5.8182	6.2424
Bari	AA	6.6667	67	6.0909	6.3788
Bologna	AA	6.6667	85	7.7273	7.1970
Cagliari	AA	6.6667	62	5.6364	6.1515
Campobasso	AA	6.6667	48	4.3636	5.5152
Catanzaro	AA	6.6667	61	5.5455	6.1061
Florence	AA	6.6667	86	7.8182	7.2424
Genoa	AA	6.6667	85	7.7273	7.1970
L'Aquila	AAA	10.0000	92	8.3636	9.1818
Milan	AA	6.6667	94	8.5455	7.6061
Naples	AA	6.6667	71	6.4545	6.5606
Palermo	AA	6.6667	68	6.1818	6.4242
Perugia	AA	6.6667	62	5.6364	6.1515
Potenza	AA	6.6667	47	4.2727	5.4697
Rome	AAA	10.0000	79	7.1818	8.5909
Trento	AA	6.6667	59	5.3636	6.0152
Trieste	AA	6.6667	70	6.3636	6.5152
Turin	AAA	10.0000	88	8.0000	9.0000
Venice	AA	6.6667	60	5.4545	6.0606
===	===	===	===	===	===
Average	===	7.1667	===	6.3182	6.7424
Median	===	6.6667	===	6.1364	6.4015
Modal	===	6.6667	===	7.7273	7.1970
Std.	===	1.2212	===	1.3902	1.3057
Deviation					
Minimun	===	6.6667	===	3.8182	5.2424
Maximun	===	10.0000	===	8.5455	9.2727

**Table 3. The assessment concerning the variable (Y)**

<b>Cases study</b>	<b>(yi) Assessment made by CoT</b>	<b>(yi) Assessment made by CoT expressed in 10/10</b>
<b>Case (A): Italian Fiscal Agencies</b>		
Revenue Agency	50	7.8125
Customs Agency	57	8.9063
Public Land Agency	32	5.0000
===	===	===
Average	===	7.2396
Median	===	7.8125
Modal	===	NA
Std. Deviation	===	2.0152
Minimum	===	5.0000
Maximum	===	8.9063
<b>Case (B): Capital cities of the Italian Regions</b>		
Ancona	2	0.3077
Aosta	0	0.0000
Bari	0	0.0000
Bologna	50	7.6923
Cagliari	46	7.0769
Campobasso	65	10.0000
Catanzaro	0	0.0000
Florence	60	9.2308
Genoa	60	9.2308
L'Aquila	65	10.0000
Milan	65	10.0000
Naples	65	10.0000
Palermo	65	10.0000
Perugia	60	9.2308
Potenza	65	10.0000
Rome	61	9.3846
Trento	30	4.6154
Trieste	0	0.0000
Turin	65	10.0000
Venice	64	9.8462
===	===	===
Average	===	6.8308
Median	===	9.2308
Modal	===	10.0000
Std. Deviation	===	4.2184
Minimum	===	0.0000
Maximum	===	10.0000

Table 4. The evaluation of the correlation indexes

Cases study	(x <sub>i</sub> )	(y <sub>i</sub> )	(x <sub>i</sub> - μ <sub>x</sub> )	(y <sub>i</sub> - μ <sub>y</sub> )	(x <sub>i</sub> - μ <sub>x</sub> )(y <sub>i</sub> - μ <sub>y</sub> )	(x <sub>i</sub> - μ <sub>x</sub> ) <sup>2</sup>	(y <sub>i</sub> - μ <sub>y</sub> ) <sup>2</sup>
Case (A): Italian Fiscal Agencies							
Revenue Agency	5.0000	7.8125	-1.9987	1.4943	-2.9867	3.9948	2.2329
Customs Agency	6.6667	8.9063	-0.3320	2.5881	-0.8593	0.1102	6.6980
Public Land Agency	4.7778	5.0000	-2.2209	-1.3182	2.9276	4.9325	1.7377
===	===	===	===	===	===	===	===
Statistical symbols	μ <sub>x</sub>	μ <sub>y</sub>	===	===	Σ(x <sub>i</sub> - μ <sub>x</sub> )(y <sub>i</sub> - μ <sub>y</sub> )	Σ(x <sub>i</sub> - μ <sub>x</sub> ) <sup>2</sup>	Σ(y <sub>i</sub> - μ <sub>y</sub> ) <sup>2</sup>
Corresponding values	5.4815	7.2396	===	===	-0.9184	9.0375	10.6686
Correlation index ( r )	0.7872	===	===	===	===	===	===
Case (B): Capital cities of the Italian Regions							
Ancona	5.2424	0.3077	-1.7563	-6.0105	10.5561	3.0845	36.1262
Aosta	6.2424	0.0000	-0.7563	-6.3182	4.7783	0.5720	39.9197
Bari	6.3788	0.0000	-0.6199	-6.3182	3.9167	0.3843	39.9197
Bologna	7.1970	7.6923	0.1983	1.3741	0.2724	0.0393	1.8882
Cagliari	6.1515	7.0769	-0.8472	0.7587	-0.6428	0.7177	0.5757
Campobasso	5.5152	10.0000	-1.4835	3.6818	-5.4621	2.2009	13.5557
Catanzaro	6.1061	0.0000	-0.8926	-6.3182	5.6399	0.7968	39.9197
Florence	7.2424	9.2308	0.2437	2.9126	0.7099	0.0594	8.4831
Genoa	7.1970	9.2308	0.1983	2.9126	0.5775	0.0393	8.4831
L'Aquila	9.1818	10.0000	2.1831	3.6818	8.0378	4.7660	13.5557
Milan	7.6061	10.0000	0.6074	3.6818	2.2362	0.3689	13.5557
Naples	6.5606	10.0000	-0.4381	3.6818	-1.6130	0.1919	13.5557
Palermo	6.4242	10.0000	-0.5745	3.6818	-2.1150	0.3300	13.5557
Perugia	6.1515	9.2308	-0.8472	2.9126	-2.4675	0.7177	8.4831
Potenza	5.4697	10.0000	-1.5290	3.6818	-5.6295	2.3379	13.5557
Rome	8.5909	9.3846	1.5922	3.0664	4.8824	2.5351	9.4029
Trento	6.0152	4.6154	-0.9835	-1.7028	1.6748	0.9674	2.8996
Trieste	6.5152	0.0000	-0.4835	-6.3182	3.0552	0.2338	39.9197
Turin	9.0000	10.0000	2.0013	3.6818	7.3684	4.0052	13.5557
Venice	6.0606	9.8462	-0.9381	3.5280	-3.3096	0.8800	12.4465
===	===	===	===	===	===	===	===
Statistical symbols	μ <sub>x</sub>	μ <sub>y</sub>	===	===	Σ(x <sub>i</sub> - μ <sub>x</sub> )(y <sub>i</sub> - μ <sub>y</sub> )	Σ(x <sub>i</sub> - μ <sub>x</sub> ) <sup>2</sup>	Σ(y <sub>i</sub> - μ <sub>y</sub> ) <sup>2</sup>
Corresponding values	6.7424	6.8308	===	===	32.4661	25.2281	343.3563
Correlation index ( r )	0.3903	===	===	===	===	===	===

### 3. Discussion and analysis

The numerical processing presented in the previous pages has provided the following results, in terms of correlation indexes:

- $r = 0.7872$ , for the first universe under study, concerning the Italian Fiscal Agencies;
- $r = 0.3903$ , concerning the second case of the municipalities, capital cities of the Italian Regions.

Both values are positive, and this confirms the initial hypothesis of the research (e-government towards transparency), but the first case reported has a positive correlation much higher than the latter: the reasons for this difference are probably attributable both to the different kinds of organization present in the two cases, and to the different profile of the services provided. Usually in the Italian Fiscal Agencies, the management of information systems takes place at the central level:

this implies a uniformity of service provided. Moreover, almost all agency services are delivered by electronic means, while only the case of tax dispute takes place with access into the local structures: these empirical findings are common in all the models of e-government models described in the previous pages. Different is the case of the municipalities, capital cities of the Italian Regions; these Local Public Administrations have an autonomous and independent management of information systems (James, 2011): that except for applications concerning the G2G. Only for these cases, the single municipality depends on the central structures.

As reported it involves heterogeneity from the point of view both of the services provided online, and from the point of view of administrative transparency perceived by citizens-users of the P.A. websites (Vigoda, 2002). In this last case (concerning the municipalities, capital cities of the Italian Regions) the absolute value of the correlation index –  $r = 0.3903$  – indicates the presence of a weak link between the two phenomenon observed (the assessment of websites quality and related services provided online and the evaluation of the administrative transparency). The gap registered on some units studied (on the twenty municipalities, capital cities of the Italian Regions), could often depend on the website management: the people who run the business are different from those who take care of the website technical aspects. Although it is required a work division inside the complex realities, which classify the municipalities involved in the survey, a website management less parceled and more systemic, addressed to the common goal to increase the citizen/user' expectations – demands profoundly changed by the present global financial crisis (Allen *et al.*, 2012) – could raise the performance on the whole. There is no doubt about the result obtained from the survey since it leads to reflect on aspects that the website quality level, under the technical standard status and the standard rules, doesn't establish a suitable indication to represent the quality and the performance assessment of the local institution in order to give proper answers to new citizens needs depending on innovation and modernization requirements of the public facilities. The approach followed in the assessment of sites tends to highlight the biphasic action of e-government processes: on the one hand, these processes represent a right way to introduce efficiency and effectiveness in the Public Sector management (short term profile shown by the W3C-MVS and Radar Web PA's tools), on the other hand, e-government applications can have a useful effect on the ethical shared behaviors (long term profile shown by the Compass of Transparency tool) (Maesschalck, 2004).

With reference to the performance assessments of the institution to manage online services – focused by the variable (X) using the tool called Radar Web PA [or PA (Public Administration) Web Radar] – there is another weird phenomenon related to the digital divide that means “(...) *the gap between those who have computers with Internet access and those who do not, as well as the gap between those who are computer literate and those who are not.* (...)” (APA, 2014). The aspects on which depends the digital divide are various; particularly, the infrastructure

qualities, the education level, the financial conditions, the sex differences, the age, the belonging to various ethnic groups and the geographic origin.

The assessments obtained in the survey about the Radar Web PA variables have been regulated on three levels: Excellent (score from 8.00 to 10.00), Good (score from 6.00 to 7.99); Mediocre/Poor (score from 0 to 5.99). As far as the information collected in the survey, is concerned it is clear that the excellence peaks are in the capital cities of the northern regions (Piedmont and Lombardy). Even L'Aquila shows a particular receptiveness to the issues connected to the website management obtaining excellent scores with the various measurement instruments used in the survey, but the latter case is the exception to the rule found by the research. Apart from these few examples of excellence, the situation analyzed showed a poor correlation between the two variables observed, while noting modal values and averages relatively high, the same are rarely present in a single administration: the study, therefore, reveals a dual aspect of the digital divide phenomenon: a social digital divide and a territorial digital divide.

The result of the research indicates that something has been done, but much more needs to be done in Italy in the field of e-government applied to Local Public Administrations: the development of appropriate applications of e-government at this time would certainly be a strong signal of support to the Italian Nation and a significant stimulus for the economic recovery.

Unfortunately, the criticisms reported above are confirmed at the international level by the survey published by the United Nations in the field of e-government, titled "E-Government Survey 2012. E-Government for the People" (UN, 2012). The document is a biennial survey of the United Nations presents two international rank indexes: the "United Nations e-government development index" and the "e-participation index".

The "United Nations e-government development index" (EGDI) is "(...) a composite indicator measuring the willingness and capacity of national administrations to use information and communication technology to deliver public services. It is based on a comprehensive survey of the online presence of all 193 Member States, which assesses the technical features of national websites as well as e-government policies and strategies applied in general and by specific sectors for delivery of essential services. (...)" (UN, 2012: 119). Comparing the last two editions of the index (published in 2010 and in 2012) Italy improves its situation going from position 38<sup>th</sup> (with EGDI=0.5800) to 32<sup>nd</sup> (with EGDI=0.7190), but unfortunately this position is still far from the first nations present at the apex of international ranking 2012.

The essence of the second index – “e-participation index” – is very closed to the concept of administrative transparency, used in this work. This index is presented in the UN survey in the following way:

“(…) The e-participation questions, as part of the e-government questionnaire, extend the dimension of the Survey by emphasizing quality in the connected presence stage of e-government. These questions focus on the use of the Internet to facilitate provision of information by governments to citizens (“e-information sharing”), interaction with stakeholders (“e-consultation”), and engagement in decision-making processes (“e-decision making”). A country’s e-participation index value reflects how useful these features are and how well they have been deployed by the government compared to all other countries. The purpose of this measure is not to prescribe any particular practice, but rather to offer insight into how different countries are using online tools to promote interaction between citizen and government, as well as among citizens, for the benefit of all. (...)” (UN, 2012: 125).

The definition of the United Nations indicates that the “e-participation index” includes the issues previously discussed with reference to the concepts of e-governance and administrative transparency. Also in this second international ranking Italy shows a mediocre performance: it occupies the 22<sup>nd</sup> place (with the Nations of Czech Republic, Malta and Venezuela) overall on a full list consisting of 32 positions. The score obtained is 0.2632 / 10.0000, a value that is placed in a position slightly higher than the world average (0.2225 / 10.0000), but less than the result recorded as the European average score (0.3482 / 10.0000). This result is a further empirical evidence of the Italian delicate situation concerning the implementation of the processes of e-government under study in the present research.

## **4. Conclusions**

The overall aim of the study has been to identify the Public Management Information System (PMIS) as a tool to jointly optimize both operational efficiency and administrative transparency. Following this approach, PMIS (that can simply be considered as the study of the Management Information System (MIS) applied to the Public Sector) can be seen both as a mechanism for reducing the public spending (Keen *et al.*, 1997; Tanzi *et al.*, 2000; Wildavsky, 1980) and as an instrument for improving the public ethics (Argyriades, 2006; Frederickson *et al.*, 2013; Gortner, 1991; Van Wart, 1998): at the present moment two goals strongly felt at the level of EU policies.

In brief, the study has included the analysis of the correlation between the assessment of websites (and related services provided online by the Public Institutions) [variable (X)] and the evaluation of the administrative transparency [variable (Y)] by a comparative assessment applied to two sectors of the Italian

Public Administration: the field of Fiscal Agencies and that relating to the municipalities, capital cities of the Italian Regions.

The empirical result has shown how, in the Italian Public Administration, the website quality is not a simple measure or a standard's respect, but a bigger concept that concerns the entire organization appearance: the website quality can be expressed even through small details that show the organizations ability to be by the user side. This ability can be revealed by small improvement interventions: sometimes, it can be enough posting online the forms updated, or rewriting the pages of an internet website using a more natural and less bureaucratic language (Barzelay, 1992; Bell, 2001; Shuy, 1998).

Another consideration presented during the survey concerns the data analysis based on the comparison of the database obtained. These comparisons between the two cases under study (Fiscal Agencies and municipalities, capital cities of the Italian Regions) allowed proving the need to identify some standards shared by the community of reference concerning the performance assessment under the profile of the website management, in order to start actions to promote a suitable benchmarking process.

The recurring comparison of the system with other Public Administrations (to a local or central level, with empirical different evidences as in our case) should be chosen as regular working method, because releases the institutions from self-referential mechanisms and represents a good instrument to learn the best practice, identify strengths and weakness inside the organizations to improve and to be always directed to the citizen/user's satisfaction (Roch, 2006; Dawes *et al.*, 2009).

The final hope is that the contents of the research can be developed in other directions, such as the realization of an improved model through applications to the other areas of the Italian Public Administration and the implementation of benchmarking activities (Homburg, 2001; Lenz *et al.*, 1994) with other Countries of the European Union, through the use of common research methodologies for creating an international web system of "transparency compliance" and finally this goal should be transposed into the next reforms concerning the European Union policies, hoping for a target convergence between the European member States: a convergence often desired and often rejected. (Dimitrova *et al.*, 2000; Soverchia, 2009; Wallace *et al.*, 2010).

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<sup>1</sup> In addition to what is reported about the Italian Fiscal Agencies, more information is available at: <http://www.mef.gov.it/en/ministero/agenzie-fiscali-entrate.html>

<sup>2</sup> Source and more information at: <http://validator.w3.org/>

<sup>3</sup> Source and more information at: <http://europa.formez.it/content/radar-web-rilevare-la-qualita-dei-siti-web-della-pa>

<sup>4</sup> Source and more information at: <http://www.magellanopa.it/bussola/page/overview.html>