E-government and Participation: Public Engagement in Italian Government Websites

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Abstract
Communication skills between institutions and their citizens have assumed, in recent years, a vital importance within the decision-making processes. The study aims to investigate the interactional communication relationship between the public body and Italian citizens. In particular, the research focuses on the impact of the quality of IT services on encouraging citizens to use and participate in them.

The theoretical framework deployed in the research is based on the managerial component of the Technology Acceptance Model (TAM), an application branch of the reasoned action theory. The study adopts an empirical method based on web content analysis, conducted on the institutional sites of the Italian provinces, in order to assess the quality of the e-government services provided.

Keywords: E-government, participation, Government website, provinces.

Introduction

Through the implementation of the new Information and Communication Technologies, public institutions started a transformation phase towards a new digital ecosystem, trying to create new channels of contact, interaction and communication with citizens[21]. To reduce the distance with the citizen and try to implement new methods of study and response to his needs, Governments have started to equip themselves with systems of e-government and intelligent governance[11,14,25].

The advent of e-government initiatives may significantly contribute in improving the efficiency of public administration[15,17,23,40,56], the effectiveness of public services[2,17,23,26,32] and the democratic legitimacy of the local Government[17,26,49,60].

However, the e-government initiatives so far deployed have simply represented an extension of the already existing managerial paradigms of governance and their implementation has focused mainly on the perspective of suppliers[8,41,47]. For this reason, the impact of e-government in the public participation remained contained despite the investments made in the area of public digitalization.

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According to Eurostat statistics, in Italy, only 29% of people aged between 16 and 74 have attested to having used ICT systems to achieve interactions with public authorities in 2020. Consistently, the relationship between citizens and Italian institutions, undertaken through online platforms, stands among the most content in the European context. Only by applying e-government technologies towards citizens, the key principle of e-governance, can public administrations effectively meet the needs and requirements of their citizens[3-5,36]. Several studies show that the use of technology can help solve political and social problems in modern governance and identify government websites as the key tool for this dimension[11,14,22,25].

Institutional websites have different functionalities including the publication of information, the provision of public services and the participation of citizens[3,5,36,41]. To this end, public websites should be designed to promote democratic principles and processes[5,22,36,55]. In this scenario, although authoritative studies[10,34,43,60] have highlighted the characteristics that this new type of governance should possess to maximize the effectiveness of citizen involvement, a specific study aimed to evaluate the practical and empirical dimensions of such initiatives has not been conducted[41,54].

Studies on the evaluation of the performance of e-government initiatives take into account the conceptual and theoretical data[27,35,64] while, by contrast, only a smaller number of studies have empirically analysed the factors influencing citizens' adoption of e-governance systems[50]. At the same time, there are still few research studies on the effects of the introduction of e-government tools and platforms on the intensity of active participation[7].

The present research work aims to analyze empirically the factors that influence the use of the platforms present within the institutional web portals of the Italian provinces. More specifically, the study focuses on the relationship between the degree of development of public communication channels on the websites of the Italian provinces and metropolitan cities and the level of participation of the target population.

In order to evaluate empirically the quality of the participatory offer of the institutional websites of the Italian provinces, the model "Democratic E-governance Website Evaluation Model" (DEWEM) developed by Lee-Gellier and Lee[41] is used in this research work. Although the model also includes an indication of the evaluation criteria relating

to service quality and e-service, this study explores the third dimension of the model, citizen participation, as it is intended to limit the scope of assessment to citizen engagement practices only.

Different studies in the literature have provided evaluation criteria in relation to the design of websites including those related to the quality of the website[22,25], e-service[48,52] and open government[12,51] but only a few authors have managed to create a complete model of evaluation of the participatory capacity present in such platforms[41].

This work can therefore be a contribution to research because, in addition to what already conceptually deepened by Glyptis et al[27], Das et al[19], Jho and Song[35] and Zhao et al[64] regarding the acceptance as a result of a good evaluation of the performance of the web service provided, it empirically analyzes the factors that influence the adoption by citizens of e-government platforms. In this sense, the research deepens the acceptance and the consequent participation deriving from the quality of citizen engagement services deployed in the institutional portals of the Italian provinces and metropolitan cities.

To this end, the research is based on a dataset comprising 107 Italian provinces and metropolitan cities. The results of the study, based on the web content analysis method, conducted in the dimension of Citizen engagement proposed by the DEWEM model and expressed in the analysis of the features of citizen participation present in the institutional portals of the Italian provinces and metropolitan cities, contribute to providing a State of the Art of quality of participation service and in assessing a relationship between it and the content level of digital adoption by citizens.

Early studies of the acceptance and adoption of information technologies were theorized in the same time with the adoption of the Internet system between 1980 and early 1990[20]. At this stage, the network still had few users and was mainly funded by government administrations and research institutes. Although at the time it was estimated that the Internet system would remain the exclusive preserve of a niche of enthusiasts, since the mid-1990s this technology has experienced a phase of undisputed growth, establishing itself as the world's leading communication tool[28].

As a result of these developments, the need to deploy technology acceptance models has been clearly identified since the mid-1980s in order to better understand the impacts of future technologies on end users[20].

In response to the mentioned phenomena and their possibilities of expansion in new market areas, literature has developed real models and theories of acceptance of technology[46]. The importance of the development of such models is seen in the fact that the technological diffusion is not realized in an equitable or universal way but depends deeply on the context and the local social dynamics[54].

Consequently, in assessing the relationship between the citizen and the local institutions, it is essential to study the technological dimensions relating to the local sociocultural context, also in order to understand how technology can be adapted and applied to different social contexts[14]. Moreover, as already pointed out, the acceptance of technology is a critical factor of adoption, as the smart technologies underlying the development of smart cities are a fundamental means of supporting the deployment of urban services[54]. According to the systematic analysis of literature conducted by Hsiao and Yang[31], technology acceptance models can be classified into several categories.

The study presents three main directions of Technology Acceptance Model that can be adapted to highlight their relevance to citizen-centric research in the field of smart cities. These categories are divided into 1) A hedonistic psychological approach that focuses on entertainment and ease of use; 2) A social or commercial approach that focuses on how to identify, attract and retain the consumer; 3) A utilitarian and managerial approach to information systems based on the evaluation of the quality of the services provided.

Last set of theories are aimed at assessing the acceptance of technology as a result of the quality of online services provided by organizations and the dialogue between organizations and consumers[18,54,61].

The models presented within the theoretical managerial component of the TAM can be reorganized into two categories: theoretical models and empirical models[54]. The theoretical models are structured through the development of the original models such as the theory of "reasoned action", the theory of "planned behaviour" and the technology acceptance model. In structuring the conceptual framework, such models use, therefore, theoretical approaches already present in the literature[20,33,44]. Empirical models, instead, use frameworks that integrate the original theories with external factors taken from other models[6,18,54,55].

According to Sepasgozar et al[53] empirical models are more applicable to specific contexts to make a deeper understanding of selected communities. At the same time, these models can also be deployed in different contexts to explore in a diversified way the various aspects and features of technology acceptance. Most scientific studies on the quality of websites focus on the identification of characteristics that affect their reusability by users[42] since the quality of the website is strongly correlated with user satisfaction[41].

In this sense, the considerations on perceived utility and perceived ease of use illustrated in Davis' Technology Acceptance Model[20] have been the foundations of the subsequent study developments in this field. The technology acceptance model has constituted, to date[1,39], the theoretical

foundation on studies related to the use of e-government technologies by the citizens. In this sense, therefore, the TAM represents the most reliable theoretical reference, having been used as a basis for numerous conceptual and empirical studies on predictions and changes in relation to user perceptions[27,37,40,58].

The theories of acceptance have therefore been used as the theoretical base for the studies on the usage of web platforms by the consumers, since the adoption of new technologies, even as a result of an institutional context, comes from a type of internal and external acceptance[13,62].

In the context of the interaction between man and computer, the analysis of the user experience is correlated to several characteristics such as the involvement of the user, its interaction with the interface of the website and its measurability[13,57,62]. User experience measurements include the ability to complete a task, the effort required to complete the task and the degree of user satisfaction in completing the task[57]. The user experience is also strongly linked to the technical and design features of the website including the user interface which determines the content layout and design features[41].

Usability in this sense measures how easy the website interface is to use. Nielsen's[45] work on usability has contributed significantly to the development of website design research[33,44]. In believing that the acceptance by citizens of a new technological system is an essential element in the implementation of e-government, Shareef et al developed a model of adoption of technologies and-Government in order to identify the critical factors that allow citizens to come into contact with these new tools. This model, derived directly from the TAM, is structured in five constructs: the aptitude for use, the ability to use, the safety of use, the adherence of use and the adaptability of use.

More recently, qualifying existing models as not totally appropriate, Dwivedi et al[22] have identified a unified e-government adoption model integrating fragmented theory with further research. Within the model, scholars propose a more in-depth measurement system to explain how expectation on performance, expectation on effort, social influence, facilitative conditions and perceived risks influence citizens' ability and intentions to use a new technology. The model highlights the importance of the psychological element in the behavior of citizens, but at the same time fails to understand the different stages of adoption of e-government systems such as the phase of visiting, the use of information, the completion of transactions and interaction with the same e-government[41].

In essence, the studies on the quality of websites have provided a fundamental understanding in relation to the acceptance of the purely technical aspects of this field. Nevertheless, the qualitative variables of e-government websites already studied in literature[22,45,55] mainly concern technical characteristics related to certain psychological aspects (emotional appeal) and even more partial evaluation criteria about participation initiatives.

In recent years, literature in the field of analysis and management of Government websites has highlighted topics similar to those proposed by the open government movement, such as the analysis of the concept of transparency[12,63], openness[51], perspectives of citizens[8], public value[16,38] and participation platforms.

In the research on the concept of transparency, the focus of the analysis was about the information present within the website. Yang and Paul[63] reviewed 150 local Government websites in the United States, focusing specifically on available information, online services and website design. Their study provided meaningful insights into the issues and challenges of US local government website institutions, such as the lack of official websites in small cities, the lack of published information and the lack of financial resources at local level. Nevertheless, the combination of selected variables seemed incomplete[41].

On the other hand, Caba Pérez el al[12] have placed at the center of their study the accessibility of financial information in the countries of the European Union, focusing on the type and quality of information, navigability, design and accessibility of the websites. Considering a wide range of financial and technical information, Caba Pérez et al[12] gave an insight into what concerns financial transparency within government websites. However, the authors have not considered the more interactive aspects of Government websites that allow citizens to participate in decision-making processes. In this sense, regarding the effects of the openness of e-government, the study of Pina et al[51] on 15 countries of the European Union, showed the underdevelopment of government-citizen interactivity of Government websites in four dimensions: transparency, interactivity, usability and maturity of the website. In this study, the authors argued that the excessively bureaucratic and detached vision of the relationship between government institutions and the citizen prevented the full realization of the benefits deriving from e-government activities[51]. In this context, a citizen-centric paradigm was proposed in which they measured only the interactivity resulting from the tools for deliberative processes, such as suggestions, comment boxes and citizen consultations, leaving aside the dimension of actual collaboration.

Trying to address the critical vision that saw the perspective of the creators of e-government platforms as the only implementation way, Barbosa et al[8] incorporated the perspective of citizens in their model of evaluation of the e-government including measures that, according to them, would have been able to study the level of satisfaction of the citizens: the understanding of the needs of citizenship, the management of transparency and the relations between citizens and their Government. In addition, the analysis of

Government websites in a public value perspective has led to the important conceptualization of websites as instruments aimed at a very specific purpose.

In this sense, Karkin and Janssen[38], asserting that the primary objective of institutional websites is to provide public value, draw up a series of new indicators aimed at understanding public value aspects, such as citizen engagement options (tools for collecting proposals from citizens, preparing questionnaires, live transmission of government meetings), dialogue (tools for facilitating online dialogue) and those for balancing interests (the ability of the website to meet the needs of the community impartially).

Research on e-government websites filtered from this point of view, focused on the presence of one or more objectives, has brought to light new types of relationships between citizenship and public decision makers in which both represented key players in the creation of public value and governance[30].

From this new concept of co-production, scholars have therefore introduced an important connotation of institutional websites: Government websites should represent digital platforms for participation. In this vision, institutional websites become internet-based platforms specifically created to foster participation and collaboration, in which citizens become the first proponents of content and functionality.

Although social networks such as Facebook and Twitter remain characterized by similar characteristics, the e-government platforms of citizen participation represent more specific spaces oriented to the dialogue between the two big stakeholders. Despite the heterogeneity of functions, in the most recent literature, the portals of communication and participation have become a sine qua non condition of the structure of institutional websites[41].

In essence, studies on the structure of government websites oriented towards participation have helped to integrate and support research in this area in a significant way. To this end, it is necessary to implement a model that incorporates in a valid model and completes all the variables deriving from this perspective.

For smart public context and policy makers using a "citizen-centred" approach, effective acceptance of technology by users is a critical factor of understanding. The technology acceptance model (TAM) and social cognitive theories are concepts developed in the research of information and communication systems and represent, to date, the main reference theories on the measurement of individual perceptions about the usage of new technologies[46,53]. TAM is one of the most reliable models in this field and has been used as a theoretical basis for numerous empirical studies about the predictions and changes in relation to user perceptions[37,40,58].

The model is structured in two dimensions: perceived utility and perceived ease of use. The first dimension is associated with the perception that an individual feels in relation to the possibility that the adoption of a certain technology will serve to improve the performance of everyday tasks and jobs. This construct can be considered as "perceived utility"[58,59]. The second dimension, "perceived ease of use", is instead associated with the individual perception that the use of a certain technology will make everyday tasks easier[37,58,59].

In recent decades, other solid theoretical models have been proposed and developed contributing to deepen and enrich the theoretical scenario. However, the application of such models for smart cities and e-government practices has proved to be difficult to implement, as empirical studies on individual local entities have not allowed the creation of successful models that are extensible or repeatable.

While the mentioned theories remain valid[58], the literature on smart governance and implementations of e-government has not made a real effort to apply them to provide a deeper understanding of the experience of users of urban technology services.

In the examination of the appraisal of the quality of the platforms participative e-government, the component of the technology acceptance model that is taken in consideration is the one which highlights the managerial approach, focusing on citizen participation in relation with the characteristics and features of the service provided[53]. In this specific branch of the TAM are reported a series of models designed to assess the quality of online services within organizations and of the dialogue with their consumers[18,54,61].

According to this theoretical approach, citizens' assessment of e-government and smart governance systems plays a key role in the final decision to actually use these tools. Previous research has already conceptually attested to this assumption, both in the specific area of e-government and in the general perspective of technological urban services[53] but there is still a lack of applications for the assessment of citizen participation. In this context, the design and promotion of e-government portals emerge as strategic management tools that can influence the perceptions of citizens themselves[50].

The models related to the managerial conception of the TAM can be divided in two subcategories: theoretical models and empirical models[31].

The theoretical models are structured through the development of the original models such as the theory of "reasoned action", the theory of "planned behaviour" and the technology acceptance model. In structuring the conceptual framework, such models use, therefore, theoretical approaches already present in the literature[20]. Empirical

models, instead, use frameworks that integrate the original theories with external factors taken from other models[6,18,53,55].

According to Sepasgozar et al[54], empirical models are more applicable to specific contexts to make a deeper understanding of selected communities. At the same time, these models can also be deployed in different contexts to explore in a diversified way the various aspects and features of technology acceptance. For this reason, setting a theoretical framework and given the approach that this research reserves specifically to the context of the Italian provinces and metropolitan cities, the managerial meaning of the technology acceptance model is used in order to assess the relationship between the quality of the service provided and the usability of the service by the public (citizens).

Among the components dedicated to the analysis of the public offer of services, the quality of service is an important indicator of technological acceptance and continuity of use[53]. Users tend to avoid using or continuing to use services of inconsistent quality (Bandura, 1989). Some authors argue that the quality of a service directly affects the loyalty and satisfaction of users, thus constituting an important assessment metric for technology acceptance[13,62]. The main interest of studies on the quality of websites concerns the identification of characteristics that affect the reusability of the latter by users[42] as the quality of the website has a strong correlation with user satisfaction[13,62].

In recent years, the literature relating to the analysis and evaluation of institutional websites has introduced a new and decisive factor: participation capacity. In this vision, institutional websites become internet-based platforms specifically created to foster participation and collaboration, in which citizens become the first proponents of content and functionality. For a study that wants to analyze the determining factors the use of the governmental websites, the analysis of the features of citizen engagement therefore becomes of primary importance. The possibility for citizens to participate in governance processes not only represents a crucial point in improving the democratic legitimacy of local policies but also constitutes one of the main methods of production of public value and outcome[24]. In the search for increasingly democratic e-governance systems, it is essential for public authorities to implement and create operational platforms within their websites, able to stimulate citizen engagement.

From the considerations of technological acceptance, the analysis of institutional websites and the quality of citizen engagement present in such websites, it follows that: the quality of participation services provided within institutional web portals influences the effective digital participation of citizens.

H1: The presence of participation tools in Government websites has a positive effect on citizens' use of them.

Material and Methods

For the empirical analysis, this study is based on data collected within the institutional websites of the Italian metropolitan provinces and cities. The sample therefore refers to the ISTAT 2021 survey, which includes a total of 107 territorial units. Subject of the sample are only the provinces still active, so that, following the regional law 9 December 2016, n. 20 of Friuli-Venezia Giulia, the provinces of Trieste, Gorizia, Udine and Pordenone were administratively deleted and consequently removed from data sampling. At the same time, Valle d'Aosta does not have a provincial website. In addition, for the year 2021 there were no recorded accesses to the official website of the Province of Viterbo. The total number of samples is therefore 101. As for the analysis of the traffic data present on the websites, the monthly traffic flows recorded in the year 2021 are collected.

In order to assess the participatory capacity of each institutional website, the study uses the model provided by Lee-Gellier and Lee[41], called "Democratic E-governance Website Evaluation Model" (DEWEM). Since the study aims to investigate precisely how the presence of platforms and channels of citizen participation in government websites affects their use by the target population, web content analysis is a methodology in line with the objectives of this study. A thick-box method was used for the content analysis, in which two dummy variables are constructed assuming the value of 1 if the website presents the specific characteristic and 0 if it is absent. In this sense, Lee-Gellier and Lee[41] identified three variables:

1) "Political efficacy" as an effective indicator of civic involvement as the perception of citizens participating in public co-creation activities and the realization of their civic duties generates an impact in the same political process.
2) "Deliberation", since Government websites can provide virtual spaces for public discussions, Lee-Gellier and Lee introduce this variable into their model where questionnaires, surveys and tools are evaluated to include comments and discussions.
3) "Collaboration" is important because the structure of an institutional website orients the citizen towards a direct communication marked by a type of highly participatory democracy.

In order to determine the degree of correspondence of the website with the characteristics required by the model, a feature index is calculated, a qualitative-based tool designated to measure a series of items that must be aggregated. Fractional regression is used to model fractional data that positions in the range from 0 to 1 and is appropriate when the terms 0 and 1 are included in the model. In this study, the independent variable is then converted into a fractional index in which values ranging from 0 to 1 are included, dividing CAR(Feature) by the number of thick-box items considered. To create the model, the CAR

dependent variable is then converted to an index, using the following formula:

$$CAR\ Index = \frac{1}{n}\sum_{j=1}^{n} d_j$$

Dove:

d_j = 1 if the feature j is present in the website
= 0 if the feature j is absent

n = number of items

In order to measure the effective participation of the target population within the institutional websites, the traffic present within the same website is analyzed. Traffic analysis is considered by most as one of the main indicators of effectiveness and performative efficiency of the website itself, so it is in line with the purposes of the analysis. To obtain data traffic and number of accesses, a software is used to read website analytics: SEMrush. SEMrush is an advanced-marketing software platform that provides analytics data to businesses related to the traffic on a given website. The platform can determine the number of users who visit a particular website in a specific time frame. The analysis software was then used to generate user access data in the year 2021, within the websites covered by the sample. Monthly accesses for the year 2021 were recorded.

Three control variables were selected regarding the geographic and demographic characteristics of the territorial context to which the site refers. First, a population variable has been used in order to proportionate the extent of access to the actual local context. Secondly, a variable related to the level of education per province has been used because according to the literature in the field of digital divide[50], there is a positive relationship between the level of education achieved and the actual extent of use of e-government services and platforms. This variable will therefore be represented by the percentage of population per province which has earned at least a bachelor's degree. Finally, the age of the population is also a control variable, as the younger is the population are the greater the extent and intensity of the use of digital instruments in the relationship with the public authority[50].

Results and Discussion

The analysis of the potential effects of website characteristics on the participation of citizens in Government websites was carried out with an empirical approach through the analysis of descriptive statistics in relation to a total number of 101 observations.

Descriptive statistics show that the efficiency indicator averages 0.46. Therefore, in relation to this aspect, it is possible to highlight how on an average the analyzed sample has an efficiency significantly lower than the maximum score obtainable (4,6 out of 8, as total number of items assessable according to the DEWEM model), evidence confirmed by observed minimum (0,125) and maximum (0,875) values. In addition, the factor is shown as representative of the sample which is confirmed by the value assumed by the standard deviation which appears to be contained (0,24).

Regarding the variable of the participation, determined in absolute values, the average found in the sample assumes a value equal to 41.317,63. This character is strongly characterized by a high variability as shown by the excessively high value of the standard deviation (125,424.8) and by observed minimum and maximum values (116 and 1,169,367 respectively); data is poor representative of the sample due to the high variability resulting from the differences in terms of access detected at different provincial territories. These evidences are indeed confirmed by the data, still collected in absolute values, in relation to the population character. Specifically, in this case the average is 570,314.7. Again, the high sample variability is underlined, as attested by the high value of the observed standard deviation (617,573.1) and minimum (81,415) and maximum (4,231,451) values.

There are several considerations regarding the average age variable with an average value of 46.51 which has a limited standard deviation (1.62) and consequently a smaller sample variability; this is confirmed by the minimum (42.4) and maximum (49.8) measurements. Finally, the factor "at least graduate" describes the degree of education of users. In this case, the average number of users with at least one degree does not exceed 0,13. Variable for the values of the standard deviation (0,022) and of minimum and maximum (0,08 and 0,20 respectively) is representative of the sample even though in contrast to the literature affirming that a higher level of training is normally associated with a greater use of new computer equipment[50].

Table 1
Descriptive analysis of the sample

Variabile	Obs.	Mean	SD	Min	Max
Efficiency	101	0.46	0.24	0.125	0.875
Participation	101	41317.63	125424.8	116	1169367
Population	101	570314.7	617573.1	81415	4231451
Average Age	101	46.51	1.616633	42.4	49.8
% at least one degree	101	0.13	0.022	0.08	0.20

Fonte: Author's elaboration

Conclusion

This study analyzed institutional and Government websites as tools for digital mediation aimed at sharing information and decision-making practices[29]. In this sense, within the selected theoretical framework, e-governance has been conceptualized not only in relation to transactions and services delivered electronically, but also and above all as a form of inclusion, engagement and citizen participation in public policies. This theoretical consideration allowed the model to be used as an evaluation of the quality of the website in relation to the engagement capacity of the citizen.

Previous studies on Government websites proposed a set of criteria mainly focused on specific aspects of e-governance, such as the technical quality of the website and the quality of e-service provided[22,45,55].

In addition, this study provides a dynamic vision of the citizen as an active agent of the governance process, expanding the analytical scope of government websites from simple adoption to real engagement. Previous studies had therefore considered citizenship exclusively in a passive perspective. For example, "E-GovQual"[48] considers the citizen as a simple consumer of public service, while other e-government acceptance models see him exclusively as an end-user[8,47].

In contrast, Lee-Gellier and Lee[41] through their model provide real evaluation criteria in relation to the citizen seen as an active participant in the decision-making stages of public policy. This vision of active citizenship can deepen our knowledge of the interactions and participatory dynamics through which the website can stimulate the processes of democratic e-governance.

Despite the problems related to the inefficiencies of mass participation and the lack of expertise on the part of citizens, the importance of participation is now indisputable, given its main role in the search for legitimacy, social justice and the effectiveness of public action[24].

In this scenario, the new perspectives of participatory governance are not in a structurally substitutive way compared to traditional models, but rather intervene in a supplementary way to bridge institutional discrepancies[24].

In response to this need, the results of the study provide significant and important implications for both reference literature and policy makers. First, the Democratic E-governance Website Evaluation Model presents specific features and indications for public entities that manage government websites aimed at bringing the state-citizen relationship closer. Literature studies suggest that the Government website's digital platform can play a key role in creating a deeply collaborative and inclusive relationship between citizens and their Government. This is possible because public administrations, due to legal obligations and principles of transparency, are now at the center of a process of constant integration of their digital presence, network and identity, within Government websites[11,22,26]. In the end, therefore, citizens need an institutional website not only highly functional, efficient and well structured, but on that can provide a space for constant confrontation in which they can profitably interact and participate with the relevant policy makers.

In current institutional realities, participatory democracy fails to apply its full potential precisely because of the lack of communication skills[9]. Indeed, in the literature analyzed in support of this research work, it is stated that Governments have not sought to exploit the true potential of the website, limiting their use to an exploratory methodology and mere sharing of information[12,38,63].

Faced with this consideration, the empirical results of the content analysis carried out through the model of Lee-Gellier and Lee[41] can be an important reference for both literature and policy makers: Citizen participation increases where dialogue approaches are bilateral, not simply limited to communication and unilateral disclosure. The dimension of DEWEM dedicated to citizen engagement contributes to generating public value precisely through citizenship, a key dynamic of participatory governance.

The research is still in an exploratory phase. The empirical findings conducted in support of the Democratic E-governance Website Evaluation Model are still in the early stages of application. First, for future research it will be necessary to expand the considered dimensions of the model in order to make a more complete and holistic vision able to cover all the phenomenological spectrum of the socio-economic dynamics underlying the citizen approach to the website. It is therefore considered to integrate the dimensions of "Transparency" and "Service quality" and the related items within the content analysis of institutional websites.

Second, it will be possible to widen and vary the type and the size of the public administration to be taken as object of the study, not limiting itself to the territorial PAs, but taking into consideration also other public sectors or in-house, semi-public or participated companies. Similarly, local public administrations can be investigated in both the lower and upper dimension of the provincial context: on the one hand, it would be appropriate to deepen the dynamics underlying the citizen engagement present in the municipal websites, On the other hand, an international perspective as a comparison between the choices of website design of different states could provide important food for thought in the search for empirical determinants.

References

1. Akinnuwesi B.A., Uzoka F.M.E., Fashoto S.G., Mbunge E., Odumabo A., Amusa O.O., Okpeku M. and Owolabi O., A modified UTAUT model for the acceptance and use of digital technology for tackling COVID-19, *Sustainable Operations and Computers*, **3**, 118-135 **(2022)**

2. Al Rawahi K., Coombs C. and Doherty N., The realization of public value through e-government: a structuration perspective, 37th International Conference on Information Systems **(2016)**

3. Alarabiat A., Soares D. and Estevez E., Determinants of citizens' intention to engage in government-led electronic participation initiatives through Facebook, *Government Information Quarterly*, **38(1),** 101537 **(2021)**

4. Alathur S., Ilavarasan P.V. and Gupta M.P., Determinants of e-participation in the citizens and the government initiatives: Insights from India, *Socio-Economic Planning Sciences*, **55**, 25-35 **(2016)**

5. Arshad S. and Khurram S., Can government's presence on social media stimulate citizens' online political participation? Investigating the influence of transparency, trust and responsiveness, *Government Information Quarterly*, **37(3),** 101486 **(2020)**

6. Atzori L., Iera A. and Morabito G., The Internet of Things: A survey, *Computer Networks*, **54(15),** 2787-2805 **(2010)**

7. Bannister F. and Connoly R., The Trouble with Transparency: A Critical Review of Openness in e-Government, *Policy & Internet*, **3(1),** 1-30 **(2011)**

8. Barbosa A.F., Pozzebon M. and Diniz E.H., Rethinking e-government performance assessment from a citizen perspective, *Public Administration*, **91(3),** 744-762 **(2013)**

9. Bartels K.P.R., Communicative capacity: The added value of public encounters for participatory democracy, *The American Review of Public Administration*, **44(6),** 656–674 **(2014)**

10. Baxter D.J., E-governance and e-participation via online citizen budgets and electronic lobbying: Promises and Challenges, *World Affairs*, **180(4),** 4-24 **(2017)**

11. Bolivàr M.P.R., Characterizing the Role of Governments in Smart Cities: A Literature Review, *Smarter as the New Urban Agenda*, **11**, 49-71 **(2016)**

12. Caba Pérez C., Lòpez Hernàndez A.M. and Rodriguez Bolivàr M.P., Citizens' access to on-line governmental financial information: Practices in the European Union countries, *Government Information Quarterly*, **22(2),** 258-276 **(2005)**

13. Cahyono T.A. and Susanto T.D., Acceptance Factors and User Design of Mobile e-Government Website (Study Case e-Government Website in Indonesia), *Procedia Computer Science*, **161,** 90-98 **(2019)**

14. Caragliu A. and Del Bo C., Smartness and European urban performance: assessing the local impacts of smart urban attributes, *Innovation: The European Journal of Social Science Research*, **25(2),** 97-113 **(2012)**

15. Cho J.S., Evolution of e-government: Transparency, competency and serviceoriented government with Korean government 3.0, *Journal of Business and Retail Management Research*, **12(1),** 62-68 **(2017)**

16. Cordella A. and Bonina C.M., A public value perspective for ICT enabled public sector reforms: A theoretical reflection, *Government Information Quarterly*, **29(4),** 512-520 **(2012)**

17. Cordella A. and Paletti A., Government as a platform, orchestration and public value creation: The Italian case, *Government Information Quarterly*, **36(4),** 101409 **(2019)**

18. Damanpour F. and Schneider M., Characteristics of Innovation and Innovation Adoption in Public Organizations: Assessing the Role of Managers, *Journal of Public Administration Research and Theory*, **19(3),** 495-522 **(2009)**

19. Das A., Singh H. and Joseph D., A longitudinal study of e-government maturity, *Information & Management*, **54(4),** 415-426 **(2017)**

20. Davis F.D., A technology acceptance model for empirically testing new end-user information systems: theory and results, Massachusetts Institute of Technology **(1985)**

21. Del Vecchio P., Mele G., Ndou V. and Secundo G., Creating value from Social Big Data: Implications for Smart Tourism Destinations, *Information Processing & Management*, **54(5),** 847-860 **(2018)**

22. Dwivedi Y.K., Rana N.P., Jeyarai A., Clement M. and Williams M.D., Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical Model, *Information Systems Frontiers*, **21,** 719-734 **(2017)**

23. El-Haddadeh R., Weerakkody V. and Al-Shafi S., The complexities of electronic services implementation and institutionalisation in the public sector, *Information & Management*, **50(4),** 135-143 **(2013)**

24. Fung A., Varieties of participation in complex governance, *Public Administration Review*, **66(Special Issue),** 66–75 **(2006)**

25. Gil-Garcia J.R., Pardo T.A. and Nam T., What Makes a City Smart? Identifying Core Components and Proposing an Integrative and Comprehensive Conceptualization, *Information Polity*, **20(1)**, 61-87 **(2015)**

26. Gil-Garcia J.R., Zhang J. and Puron-Cid G., Conceptualizing smartness in government: An integrative and multi-dimensional view, *Government Information Quarterly*, **33(3),** 542-534 **(2016)**

27. Glyptis L., Christofi M., Vrontis D., Del Giudice M., Dimitriou S. and Michael P., E-Government implementation challenges in small countries: The project manager's perspective, *Technological Forecasting and Social Change*, **152**, 119880 **(2020)**

28. Goggin G. and McLelland M., The Routledge Companion to Global Internet Histories **(2017)**

29. Grimmelikhuijsen S.G. and Welch E.W., Developing and Testing a Theoretical Framework for Computer-Mediated Transparency of Local Governments, *Public Administration Review*, **72(4),** 562-571 **(2012)**

30. Horner L. and Hutton W., Public value, deliberative democracy and the role of public managers, in Benington J. and Moore M., Eds., Public value: Theory and practice, 112–314, New York: Palgrave Macmillan **(2011)**

31. Hsiao C.H. and Yang C., The intellectual development of the technology acceptance model: A co-citation analysis, *International Journal of Information Management*, **31(2),** 128-136 **(2011)**

32. Huang Z. and Benyoucef M., Usability and credibility of e-government websites, *Government Information Quarterly*, **31(4),** 584-595 **(2014)**

33. Huang Z. and Mou J., Gender differences in user perception of usability and performance of online travel agency websites, *Technology in Society*, **66**, 101671 **(2021)**

34. Janssen M. and Van Der Voort H., Adaptive governance: Towards a stable, accountable and responsive government, *Government Information Quarterly*, **33(1),** 1-5 **(2016)**

35. Jho W. and Song K.J., Institutional and technological determinants of civil e-Participation: Solo or duet?, *Government Information Quarterly*, **32(4),** 488-495 **(2015)**

36. Ju J., Liu L. and Feng Y., Public and private value in citizen participation in E-governance: Evidence from a government-sponsored green commuting platform, *Government Information Quarterly*, **36(4),** 101400 **(2019)**

37. Kabbiri R., Dora M., Kumar V., Elepu G. and Gellynck X., Mobile phone adoption in agri-food sector: Are farmers in Sub-Saharan Africa connected?, *Technological Forecasting and Social Change*, **131,** 253-261 **(2018)**

38. Karkin N. and Janssen M., Evaluating websites from a public value perspective: A review of Turkish local government websites, *International Journal of Information Management*, **34(3),** 351–368 **(2014)**

39. Katebi A., Homami P. and Najmeddin M., Acceptance model of precast concrete components in building construction based on Technology Acceptance Model (TAM) and Technology, Organization and Environment (TOE) framework, *Journal of Building Engineering*, **45**, 103518 **(2022)**

40. Lee C., Chang K. and Berry F.S., Testing the Development and Diffusion of E-Government and E-Democracy: A Global Perspective, *Public Administration Review*, **71(3),** 444-454 **(2011)**

41. Lee-Gellier S. and Lee T., Using government websites to enhance democratic E-governance: A conceptual model for evaluation, *Government Information Quarterly*, **36(2),** 208-225 **(2019)**

42. Loiacono E.T., Watson R.T. and Goodhue D.L., WEBQUAL: A measure of website quality, 2002 Marketing Educators, *Marketing Theory and Applications*, **13**, 432-438 **(2002)**

43. Manoharan A.P., Zheng Y. and Melitski J., Global comparative municipal e-governance: factors and trends, *International Review of Public Administration*, **22(1),** 14-31 **(2017)**

44. Momenipour A., Rojas-Murillo S., Murphy B., Pennathur P. and Pennathur A., Usability of state public health department websites for communication during a pandemic: A heuristic evaluation, *International Journal of Industrial Ergonomics*, **86**, 103216 **(2021)**

45. Nielsen J., Report from a 1994 Web Usability Study **(2013)**

46. Ooi K.B. and Tan G.W.H., Mobile Technology Acceptance Model: An Investigation using Mobile Users to Explore Smartphone Credit Card, *Expert Systems with Applications*, **59**, 33-46 **(2016)**

47. Osman I.H., Anouze A.L., Irani Z., Al-Ayoubi B., Lee H., Medeni T. and Weerakkody V., COBRA framework to evaluate e-government services: A citizen-centric perspective, *Government Information Quarterly*, **31(2),** 243-256 **(2014)**

48. Papadomichelaki X. and Mentzas G., E-GovQual: A Multiple-Item Scale for Assessing E-Government Service Quality, *Government Information Quarterly*, **29**, 98-109 **(2012)**

49. Pereira G.V., Macadar M.A., Luciano E.M. and Testa M.G., Delivering public value through open government data initiatives in a Smart City context, *Information Systems Frontiers*, **19,** 213-229 **(2017)**

50. Pérez-Morote R., Pontones-Rosa C. and Núñez-Chicharro M., The effects of e-government evaluation, trust and the digital divide in the levels of e-government use in European countries, *Technological Forecasting and Social Change*, **154,** 119973 **(2020)**

51. Pina V., Torres L. and Royo S., Are ICTs improving transparency and accountability in the EU regional and local governments? An empirical study, *Public Administration*, **85(2),** 449-472 **(2007)**

52. Sà F., Rocha À. and Peréz Cota M., From the quality of traditional services to the quality of local e-Government online services: A literature review, *Government Information Quarterly*, **33(1),** 149-160 **(2016)**

53. Sepasgozar F.M.E., Ramzani U., Ebrahimzadeh S., Sargolzae S. and Sepasgozar S., Technology Acceptance in e-Governance: A Case of a Finance Organization, *Journal of Risk and Financial Management*, **13(7),** 138 **(2019)**

54. Sepasgozar S.M.E., Loosemore M. and Davis S.R., Conceptualising information and equipment technology adoption in construction: A critical review of existing research, *Engineering, Construction and Architectural Management*, **23(2),** 158-176 **(2016)**

55. Shareef M.A., Kumar V., Kumar U. and Dwivedi Y.K., e-Government Adoption Model (GAM): Differing service maturity levels, *Government Information Quarterly*, **28(1),** 17-35 **(2011)**

56. Thorsby J., Stowers G., Wolslegel K. and Tumbuan E., Understanding the content and features of open data portals in American cities, *Government Information Quarterly*, **34(1),** 53-61 **(2017)**

57. Tullis T. and Albert B., Measuring the User Experience, Interactive Technologies **(2013)**

58. Van Oorschot J., Hofman E. and Halman J.I.M., A bibliometric review of the innovation adoption literature, *Technological Forecasting and Social Change*, **134,** 1-21 **(2018)**

59. Venkatesh V., Morris M.G., Davis G.B. and Davis F.D., User Acceptance of Information Technology: Toward a Unified View, *Management Information Systems Quarterly*, **27(3),** 425-478 **(2003)**

60. Wang C., Medaglia R. and Zheng L., Towards a typology of adaptive governance in the digital government context: The role of decision-making and accountability, *Government Information Quarterly*, **35(2),** 306-322 **(2018)**

61. Wolfinbarger M. and Gilly M.C., eTailQ: dimensionalizing, measuring and predicting etail quality, *Journal of Retailing*, **79(3),** 183-198 **(2003)**

62. Xianjiun Q., Minghong C. and Xiaoli L., User Acceptance Model of Government Microblog and Its Empirical Study, *Procedia Computer Science*, **162,** 940-945 **(2019)**

63. Yang J. and Paul S., E-government application at local level: Issues and challenges: An empirical study, *Electronic Government: An International Journal*, **2(1),** 56–76 **(2005)**

64. Zhao F., Collier A. and Deng H., A multidimensional and integrative approach to study global digital divide and e-government development, *Information Technology & People*, **27(1),** 38-62 **(2014)**.

(Received 10th November 2022, accepted 05th January 2023)