

Promoting social participation through Digital Governance: Identifying barriers in the Brazilian Public Administration

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ABSTRACT

Public organizations are expanding their use of the democratic potential of information and communication technologies to promote the engagement of civil society in their organizational processes. Therefore, it is possible to perceive the transformation of initiatives from electronic government to digital governance based on social participation in government decision-making. This article aims to identify barriers for the adoption of strategic goals related to social participation in the Brazilian Public Administration present in the recently launched Brazilian Digital Governance Policy. To this end, a qualitative exploratory research was conducted through document analysis and semi-structured interviews with ICT managers from public organizations. A set of 25 different barriers for social participation was identified and then grouped into four categories, classified as structural or cultural barriers according to the literature. Posteriorly, these barriers were distributed in three dimensions (individual, organizational and strategic). The results made it possible to discuss the outcomes obtained by Meijer [20] and Melitski [22] in the Brazilian scenario. The lack of citizens' involvement in government issues and the lack of governmental initiatives are the most cited barriers.

CSS CONCEPTS

- **Social and professional topics**~Governmental regulations

KEYWORDS

Digital Governance, E-participation, Social participation, Public Organizations, Barriers

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1 INTRODUCTION

Public organizations are increasingly using the democratic potential of Information and ~Communication Technologies (ICTs) in order to promote citizen engagement in their organizational processes. The underlying principle of this approach is the idea that it is not technology alone that will determine the success of these initiatives but rather how the ICT artifacts will be employed to achieve government strategic objectives [27]. The main key for the achievement of expressive results in the use of ICTs in governments is the capacity to manage the interactions of the organizational and technical aspects [30].

The focus of electronic government (e-government) efforts is to deliver services more efficiently and effectively [11, 31], attenuating the excessive dependence on the government intermediation between services and citizens. However, the changes in citizens' profiles and the opening of governments combined with the emergence of digital technologies, digital governance (d-governance) arises [11]. It goes beyond electronic services, provided citizens can participate in decision-making processes through online interactions. Digital governance is promoted by greater transparency and citizen participation through online tools co-created by governments and societies. Digital governance discussion and initiatives are common in several countries as a promise of a more citizen-centered government instead of a service-centered one [29], or even narrower views such as process-centered or civil-servant-centered ones. Conversely, some of these initiatives have not yet achieved the planned benefits because they focus on technology, rather than governance, and citizens' needs are not their main focus. In a more participatory model, interaction is considered to be constitutive of democracy itself, where the formation of opinions and political actions based on forums, groups or new virtual communities promote the development of civil society [6].

The research is based on the presumption that ICTs, like all organizational resources, must be focused on value creation. In the public sector, where investments must generate the highest public value to citizens [20], d-governance acquires an even more pronounced importance for the generation of public value by the use of ICT assets aligned with the defense of public interests. In this scenario, it is observed that more open and transparent governments provide a new paradigm of innovation in public administration, which is built around three concepts: transparency, participation, and collaboration [10]. In this way, participatory and interactive technologies (such as social media tools reinforced by mobile connectivity or digital TV) help citizens and governments to synchronously interact in order to improve decision-making and increase productivity [1]. D-governance is a way to improve government's effectiveness through co-creation with citizens – however, governments are not fast to adopt new technologies to d-governance [20]. Tassabehji, Hackney and Popovic [31] mention several examples of how attempts to transform the public sector have failed in the last few decades due to rigid norms, bureaucracy and complexities of actions, showing that ICT-enabled changes are questioned through existing institutional practices. In this context, it is noted that public managers are working to ensure that the transformation introduced by d-governance adoption improves the relationship between government and citizens. However, there are major obstacles to the success of technology implementations in government actions, such as project and system failures and human and cultural issues [22]. Thus, in order to overcome the different barriers to d-governance, public managers need to think on different strategies in the different phases of a project [20].

Aligned with this global trend, the Brazilian Federal Government recently launched the Digital Governance Policy (DGP), which aims to guide all initiatives related to the use of ICT in the relationship between the federal government and citizens. This policy is a way to increase the effectiveness of the initiatives and the generation and benefits for the whole society by expanding access to government information, improving public services and increasing social participation [3]. Three of the 10 listed strategic objectives referred to social participation. The objective of this study is to identify barriers for the adoption of strategic goals related to social participation in the Brazilian DGP, which is applied to the whole federal administration. The research question is related to which are the barriers to DGP adoption in the Brazilian scenario.

Considering the fact that public organizations are using the potential of ICTs to promote citizen engagement in their organizational processes, enabling new forms of communication between governments and citizens [16], it is important to identify and understand which are the barriers to social participation in the entire cycle of public policy development. The research gaps that drive this study is the lack of publications on the barriers to d-governance adoption in public organizations [20] and on the understanding of citizen participation difficulties in the government policies conception [29].

2 DIGITAL GOVERNANCE AND SOCIAL PARTICIPATION

2.1 Use of new ICTs to promote social participation

The literature has indicated potential benefits that a government can leverage through the use of ICTs in order to improve its relationship with citizens, such as: providing up-to-date information on government events and projects; alert and direct people in the event of natural disasters, such as floods or disease outbreaks; commercialize their services to the public and make them more accessible; and encourage the co-production of services by collecting relevant comments from participating citizens [1]. In this sense, social media, with its information dissemination, relationship development, and conversation and connectivity functionalities, has rapidly penetrated government organizations [8].

Thus, social media offers governments a new approach to create transparency and accountability, increase opportunities for participation and collaboration in decision making, or improve public services [13]. E-participation is defined as the use of ICT to support democratic decision making, allowing the dialogue between governments and citizens using a range of ICT tools [34]

In relation to the promotion of ICTs to change the relationship between government and citizens, Jung et al. [17] report that e-participation can be defined from a variety of perspectives, including civic engagement and citizen participation. In this context, these terms can sometimes be interchangeable. For example, when citizen involvement is initiated and controlled by the government to improve or gain support for decisions, programs or services or as government attempts to involve citizens in the decision-making process and administrative management. It is defined as services that allow users to create an online profile and generate content in a collaborative way, social media tools have the potential to connect citizens directly to government actors and other citizens in real time [23].

Thus, Nam [24] notes that a variety of new technological tools are available for the development of e-government. To corroborate this view, Greenberg and Newell [11] argue that with the development of recent technological tools, there is the possibility that e-government evolves into a d-governance system, where citizens can participate in the processes of decision making through online interactions. In this way, d-governance is driven by greater transparency and promoted by citizen participation through online technological tools developed in conjunction with society.

In this scenario, the ubiquitous and prevalent form of Web 2.0, which is the second generation of Web access and use, characterized as participative, disseminated, and integrated, has the potential to change both the way the government provides services and its relationship with the public. In this context, a set of popular Web 2.0 technologies, such as social networks (Facebook), wikis, blogs, microblogs (Twitter), social voting (e.g., IdeaFactory and IdeaStorm platform), and multimedia sharing platforms (YouTube and Flickr) can promote open and user-oriented governance [24].

In this scenario, in recent years, there has been a considerable growth of e- government projects using ICTs to assist governments in providing online information delivery and delivery services. New technologies promote interconnectivity between government and citizens, companies, employees and others, as well as encourage transition, decentralization and internal and external accountability in public administration [13].

Corroborating this understanding, Jung et al. [17] state that in the era of Government 2.0, advanced ICT applications facilitate civic engagement in the formulation of public policies and decision making through social media where they can facilitate the reciprocal relationship between public organizations and their managers with citizens more than other web-based platforms.

However, Chen et al. [8] describe that social media is a group of Internet-based applications that rely on the ideological development and technological foundations of Web 2.0 to enable stakeholders and government to communicate, collaborate and engage in governance. According to the authors, social media is reshaping public governance, generating new opportunities for building government-citizen relations and providing public services, public involvement and government transparency.

2.2 Digital Governance

Digital governance is the way governments use ICTs to provide information and government services to citizens, improve the quality of ICT services and provide greater opportunities for citizen participation. It involves a new style of leadership and a new way of making public policy and investment decisions [18]. Thus, d-governance has evolved as a model of governance that enhances the potential of the public sector to use appropriate technologies in order to improve governance relations – both internal and external – on various government levels. Its objectives are to promote democracy, right of expression and human dignity, supporting economic development and encouraging efficient and effective delivery of services to the society [29].

Digital governance is the use of ICTs to create public value through the collaboration of society and provide suitable information and citizen participation [18]. Bannister and Connolly [2] highlight some common characteristics for the conceptualization of d-governance, namely: (i) the use of ICTs to support public services and democracy; (ii) a governance model; (iii) functions that empower citizens; (iv) networks and relationships; (v) the use of ICTs to improve governance; and (vi) the relationship between state and citizens mediated by technology.

The concepts of electronic government, digital government, electronic governance and digital governance are used by several researchers as synonymous [14, 19]. In this research, the terms electronic government and digital governance will be used, as along with the definition of digital governance described by Kalsi and Kiran [18], which is described as the use of ICTs to provide

convenient information and citizen participation. Table 1 groups the main concepts of digital governance and the sources.

Table 1 – Digital Governance definitions

Digital Governance Definition	Author
Use of ICT to create public value through the collaboration of society.	Chen [8]
Use of ICT to support public services, government administration, democratic processes and relations among citizens, civil society, the private sector and the state.	Bannister and Dawes [2, 9]
Use of ICTs to provide convenient information, government services and citizen participation.	Kalsi and Kiran [18]
Use of ICTs by public managers to carry out their activities of supervision, planning, organization and coordination on various government levels.	Nawafleh [25]
Use of ICTs by the government to promote improvements in service delivery, transparency and public accountability in order to guarantee the quality of life of citizens.	Zamora, Barahona and Palaco [32]
Use of ICTs by the public sector aiming to improve information and service delivery, encouraging citizen participation in the decision-making process and making governments more responsible, transparent and effective.	UNESCO (17)

Source: The aforementioned references

Dawes [9] studied the development of d-governance in the United States of America related to technology adoption, policy development and implementation priorities. Based on that, she describes that it can be found in the following five objectives:

- a) Construction of a political framework – Statutes and policies that legitimize d-governance and establish political goals and rules for the use of information by the actors involved;
- b) Improvement of public services – Improvements in services with a citizen, customer or company-oriented approach, which seek government information or services;

c) High quality and cost effective in government operations – Professional and technical improvements in public management through search for efficiency, adequate infrastructures, investments, organizational innovation and performance evaluation;

d) Citizen involvement in the democratic process – Through the use of technologies, enabling greater interaction with the public in accessing information and public consultations; and

e) Administrative and Institutional Reform – Emphasis on accountability, transparency and trust of society in governance processes, defining the roles of government, citizens and society.

In this scenario, in a research to identify the barriers to the adoption of electronic services, Savoldelli et al. [28] observed that in the context of the European Union, barriers can be grouped into three types: economic-technological, managerial-organizational and political-institutional. Thus, Meijer [20] defines barriers to the innovation of d-governance as characteristics – real or perceived – of legal, social, technological or institutional contexts that work against the development of governance, because they impede demand, acting as a disincentive or obstacle for users to become involved with d-governance, impede supply, acting as a disincentive or obstacle for public sector organizations to offer d-governance, and restrict efforts to reconfigure access to information, people and public services in an ICT-enabled way. In addition to this definition, Meijer [20] points out the following categorization for them: (i) governance barriers, which encompass organizational, inter-organizational, financial and technological barriers; (ii) government cultural barriers; (iii) citizens' structural barriers, such as digital exclusion; and (iv) cultural barriers on the citizens' side. The author points out that citizens' image of government can be a major barrier, especially if they do not trust the government. It also highlights citizens' lack of interest and non-perception of utility as major cultural barriers.

In this context of lack of confidence in the government, Janssen et al. [16] report that studies have shown that citizen confidence in governments has declined a lot in recent decades, with technologies being considered the key to improving government–public relations through the d-governance. However, while e-government has the potential to improve transparency and accountability, e-services will only be adopted if citizens feel they are trusted. Thus, it is perceived that trust is important in the context of electronic services to help users overcome perceptions of uncertainties and risks, which may inhibit citizen participation in the d-government technologies [16].

Thus, there are significant political, economic and technical barriers to the development of a government as a learning organization in which information flows freely between civil servants and citizens. Sophisticated data sharing by government agencies threatens resistance to individual privacy, especially as citizens become more aware [6]. Table 2 shows the barriers according to Meijer [20].

Table 2 –Barriers to Digital Governance Barriers

	Government	Citizens
Structural	Legal restrictions, lack of funding, lack of staff and technical skills, lack of support from managers and top management and technological constraints.	Lack of technological facilities, limited knowledge and skills, lack of time and lack of integration with innovation in daily routines.
Cultural	Resistance to change, fear that innovation will weaken the robustness of government and attachment to bureaucracy.	Lack of interest, little confidence and negative image of the government, with no perceived utility, and resistance to technologies.

Source: Meijer, 2015

In the analysis of individual, organizational and strategic barriers, Melitski et al. [22] identified that (i) individual barriers include personnel issues, such as lack of training, education or motivation; (ii) organizational barriers occur when there are insufficient resources, coordination constraints, lack of communication and when the group culture is not taken into account; and (iii) strategic barriers involve policies and other external constraints that may inhibit success. Technical barriers, on an individual level, are issues of information failure and data integrity, while organizational-level technical barriers include the complexity and integrity of project systems (including hardware and software). At the strategic level, technical barriers include infrastructure needs, system integration, information architecture and alignment between the strategic objectives and the main technologies used, as can be seen in Table 3.

Table 3 - Individual, organizational, and strategic barriers

Individual	Organizational	Strategic
Lack of training	Lack of support from managers;	Lack of political support;
Personnel without proper qualification; and	Lack of planning	Exaggerated submission to the defined goals; and
Lack of a proper number of	Lack of internal communication plan; and	Lack of necessary infrastructure.
government employees	High complexity of projects	

Fonte: Melitski, 2011

It is possible to observe that organizational management barriers are the most common, as identified by the study participants. At the organizational level, critical organizational barriers include lack of support, planning, communication and resources. Interestingly, out of the 11 barriers to success identified, only two were of a technical nature: overly complex projects and lack of infrastructure [22].

3 RESEARCH METHOD

This research is characterized as a cross-sectional exploratory research, which has a qualitative focus due to the data collection and analysis techniques used during the research procedures, especially considering the definitions presented by Sampieri, Collado and Lucio [15]. The exploratory strategy was selected in order to enhance the familiarity with the subject and create more suitable propositions to future studies. The data collection was performed through document analysis and semi-structured interviews.

Document analysis was used in order to examine and understand the Digital Governance Policy created by the Brazilian Federal Government (BFG) in 2016. Moreover, this analysis has the intention to identify the expectations and strategies aiming to achieve the DGP goals.

Interviews were performed with 11 civil servants in charge of IT Management in several Brazilian government offices or state-run companies, aiming to identify the aspects involved in the DGP, more specifically the adoption barriers. The results of the document analysis were the basis for the elaboration of the interview scripts. The use of semi-structured interviews contributed to obtain more accurate and detailed answers from the interviewees and also avoid the misinterpretation that governance is just based on best market practices adoption. The respondents came from 10 different government offices and organizations, which perform activities related to the use of ICT on the strategic or middle-management level and present at least five years of experience in IT leadership activities. They were selected by convenience. All the interviews were conducted directly with the interviewees and took an average of 45 minutes. No specific number of interviews was specified. However data saturation was obtained after nine interviews, since no new categories or codes came up.

Respondents were identified as R1 to R11. The interviews were recorded and later transcribed by one of the researchers. After that, data were input on NVIVO® qualitative analysis software. According to Gibbs (2009), the use of a software contributes to a better organization of the *corpus* and increases the codification traceability and, consequently, the quality of the qualitative research.

Considering that the research focus is exploratory and the intention was not to study the Federal Government case, respondents can be considered as experts in the use of ICT in governments, who perceived the studied phenomena from within the government. Data analysis was performed through categorial content analysis, especially considering the definitions presented by Bardin (2010).

4 RESULTS AND DISCUSSION

4.1 Digital Governance Policy and the increasing of social participation

The social participation initiatives were identified through document analysis, more specifically the analysis of the DGP. Social participation is considered as the possibility of collaboration of citizens in all steps of public policies cycle and in the creation and improvement of public services. This policy aims to be a guide for all initiatives related to the use of ICT in the relationship between the federal government and the citizens. The ICT Department, which is part of the Ministry of Planning, Budget and Management, conducted a discussion and elaborated the policy that was published through the Decree 8638 [3]. This policy is a way to integrate all initiatives related to d-governance in public administration in order to increase the initiative's effectiveness and the generation of benefits for the whole Brazilian society by expanding access to government information, improving digital public services and increasing social participation [5].

According to the document, the necessity of refreshing and repositioning the Brazilian e-government initiatives that started in the early 2000s was the main reason to create the DGP, as a way to be more aligned with technology advancements and the society. Thus, the concept of electronic government, which refers to informatize services delivered by the government to society, is expanded to the digital governance concept in which citizens are no longer passive and start participating more actively in the creation of public policies. The citizen participation can happen not only through the Internet but also through other digital platforms, such as Digital TV.

Reference documents in the international scenario were considered, like the recent publication of the Organization for Economic Cooperation and Development [26], which recommends that governments need to develop and implement d-governance strategies focused on the following:

- ☒ Ensuring greater transparency, openness and inclusiveness of government processes and operations;
- a) Encouraging engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery;

- b) Creating a data-driven culture in the public sector; and
- c) Reflecting a risk management approach to addressing digital security and privacy issues and including the adoption of effective and appropriate security measures to increase confidence in government services.

A set of strategic principles and objectives were identified throughout the document, namely information access, services delivery and social participation. These strategic objectives should respect a set of nine principles that guide the activities of d-governance in public administration, namely focus on the society's necessities, openness and transparency, sharing of the services capability, simplicity, prioritization of digital public services, information security and privacy, social control and participation, government as an open platform and public services based on innovative solutions. The last three are related to social participation, which is the focus of this research.

The central focus of the policy is to increase the benefits to society and the public value by the operationalization of the mentioned strategies while respecting the principles. Putting into practice one of the principles defined by the policy, the one related to participation, the document was discussed with the society through seminars involving people from several hierarchical levels of the federal government, researchers and academics, civil servants from other levels (from judiciary and legislative or even from states or municipality) and representatives of business or professional associations.

4.2 Barriers to Social Participation

The barriers to social participation axis were identified through interviews with civil servants involved in ICT and e-government-related activities. The interview script was developed after the results of the previous step (item 4.1). The first of the three-section interview script was based on three open questions tackling the hindrances to the achievement of the strategic goals related to social participation. The second section inquired the respondents about the level of difficulties in adopting the DGP strategy through the strategic goals as well as the current barriers in the respondent's department. The third section was related to some department and respondent characteristics.

DGP and its strategic axis of social participation aims to foster collaboration in the elaboration of public policies, as well as to encourage the participation of society throughout the cycle of these policies. This involves allowing the direct interaction of citizens with government to express their demands, monitor policy implementation and assess their impact. It also pursues the encouragement of the active participation of society in the creation and improvement of accessible public services, taking into account regional diversities and needs and enabling the direct interaction of citizens with the government to express their needs. In the same way, the social participation axis focuses on continuous improvement of the interaction between government and society through digital, social and other technologies,

considering accessibility for everyone, regardless of their physical, motor cognitive, cultural and social limitations [5].

The first strategy was related to foster the collaboration in the public policies cycle. A set of 25 barriers was identified from the data collected and can be grouped into four categories:

- a) (12 evidences) Lack of citizens' involvement by government (R1, R3, R6, R7, R10, R11);
- b) (6 evidences) Lack of participation initiatives by government and lack of interest in participation by citizens (R2, R3, R4, R5, R9, R10);
- c) (3 evidences) Lack of proper disclosure of information (R4, R7, R11); and
- d) (4 evidences) Government focused on itself (R5, R9, R11).

Lack of citizens' involvement by government was the barrier with the highest number of evidences in the whole research. This barrier is highly worrisome because it shows that governments are not involving citizens enough in extending the services to citizens. Respondent 6 summarized this aspect: The state has to be a hand that goes to the citizen and not contrary (R6). Without efforts from part-to-part, digital governance is not going to happen. According to Respondent 3, citizens do not feel part of the government (R3).

The next strategy is related to the improvement of the direct and indirect interaction between the government and the society. It is focused on continuously improving the interaction between the government and the society through digital, social and other technological means, considering, in all the instruments used, accessibility for all people, regardless of their physical-motor and perceptive, cultural and social capacities. A set of 18 barriers were identified and assigned to the following four groups:

- a) (7 evidences) Lack of citizens' involvement by government (R1, R2, R3, R5, R10, R11);
- b) (4 evidences) Lack of proper understanding of the state functions and responsibilities (R2, R8, R9, R10);
- c) (3 evidences) Lack of proper number of civil servants and their limitations to deal with the digital era (R4, R7, R11);
- d) (4 evidences) Inadequate government-citizen communication (R4, R7).

Lack of citizens' involvement by government was again an important barrier, according to the respondents. It is connected with the lack of proper understanding of the state functions and responsibilities.

In another approach, Respondents 4 and 7 pointed out that the lack of disclosure of government information is a motivation for government-citizen detachment. As stated by Respondent 7, "If the citizen knows that he can participate in government easily, he

will" (R7). However, in support of Meijer's [20] findings, the image of the government amongst citizens can be an important barrier, especially if they do not trust government, as well as great cultural barriers of citizens for their lack of interest and non-perception. Respondent 2 states that there is a lack of culture in popular participation and discredit in public institutions. Along the same lines, Respondents 4 and 5 point out the lack of interest of the population in politics and lack of credibility in governments and the not-so-good image of government in society, respectively. Thus, it is worth noting that Janssen, Rana, Slade and Dwivedi [16] affirm that governments have relied heavily on confidence in governments in recent decades. Technologies are considered the key to improving government-public relations through digital government. Thus, while e-government has the potential to improve transparency and accountability, electronic services will only be adopted if citizens feel they are trusted. Thus, it is perceived that trust is important in the electronic context to help users overcome the perception of uncertainties and risks, which may inhibit citizen participation in d-government technologies [16].

On the other hand, individual barriers as identified by Melitski et al. [22] were found. For Responder 6, the public server ends up being the main barrier, and for Responder 3, there is a lack of technical knowledge about them. In this type of barrier, there are incidences of personal issues, such as lack of training, education or motivation. Strategic barriers were also found from the answers. According to Melitski et al. [22], strategic barriers involve lack of policies and other external constraints that may inhibit the success of initiatives in d-governance. In this sense, Respondent 9 reports that there is no political will to make this really happen, and Respondent 7 states that there is a lack of marketing to inform citizens on television that the state has tools to make their life easier.

Next strategy is related to the improvement of the direct and indirect interaction between government and society. It is focused on continuously improving the interaction between government and society through digital, social and other technological means, considering, in all the instruments used, accessibility for all people, regardless of their physical-motor and perceptive, cultural and social capacities. A set of 18 barriers were identified and grouped:

- a) (7 evidences) Lack of citizens evolvement by government (R1, R2, R3, R5, R10, R11);
- b) (4 evidences) Lack of proper understanding of the state functions and responsibilities (R2, R8, R9, R10);
- c) (3 evidences) Lack of proper amount of civil servants and also their limitations to deal with the digital era (R4, R7, R11);

- d) (4 evidences) Inadequate communication government-citizens (R4, R7).

Lack of citizen's evolvement by government was again an important barrier, according to the respondents. It is connected with the lack of proper understanding of the state functions and responsibilities.

In this way, it is verified that without efforts from both parties, d-governance will not be fulfilled. These findings are in agreement with Meijer [20], who defines obstacles to the innovation of Digital Governance as characteristics – real or perceived – of legal, social, technological or institutional contexts that work against the development of governance, because they impede demand by acting as a disincentive or obstacle for users to become involved with d-governance or impede provision by acting as a disincentive or obstacle for public sector organizations to offer d-governance and restrict efforts to reconfigure access to public information, people and services in an ICT-enabled manner.

5 CONCLUSIONS

This exploratory study aimed to identify strategies and barriers for the adoption of d-governance in the Brazilian public administration in relation to the strategic objectives related to social participation. The DGP and its strategy were analyzed, and three strategic objectives related to social participation were identified, namely: fostering collaboration in the public policy cycle, broadening and encouraging social participation in the creation and improvement of public services and improving direct interaction between the government and the society. These strategic objectives are grouped in one axis called "social participation," being related to the principle of participation and social control.

One of the main barriers is the lack of citizen involvement in government issues, which has 19 evidences from content analysis. This lack of interest is directly related to the image of public organizations amongst citizens, especially in their experiences in the use of public services and the discredit of politicians. The lack of governmental initiatives is the second most cited barrier. In fact, these two barriers can be considered as just one, due to the lack of cooperation from both parties. Lack of citizen's involvement with governments and lack of government's involvement with citizens is a two-dimensional barrier. This barrier is going to be overcome just when all parties work together as a society, in a more collaborative way. Citizens need to stop being self-centered and think of the greater good. Governments need to stop being self-serving and think of the greater good as well. Permanent participation, active transparency and the establishment of effective mechanisms for interaction and discussion constitute a good starting point for

social participation.

Some strategic initiatives can be used to address the identified barriers, such as training public servants and raising awareness of the real purpose of public organizations. An organizational governance and ICT structure would contribute to reducing complexity through collaborative decision-making and the possibility of avoiding redundant initiatives that contribute to higher transaction costs and complexity. Also, an organizational restructuring to reduce the hierarchical levels and thus reach a more horizontal structure would contribute to faster decision making, reducing the complexity within the possibilities of a public organization. Initiatives of open government would greatly contribute to placing the citizens at the center of the process, not the public servant or the processes, which would contribute to a rethinking of the structures and hierarchical levels and even of the formalization necessary and adequate to a public organization that serves the citizens.

In this way, it will be possible to bridge the existing political, economic and technical barriers to the development of a government as a learning organization in which information flows freely between civil servants and citizens. However, it is important to envisage that the sharing of information by government agencies, the asynchronous interaction between government-citizens and the constant monitoring of government actions threaten long-standing functional silos in public organizations, especially as citizens become more aware.

The main academic contribution of this study is the identification of the barriers that influence the relations between the strategies and the adoption of d-governance related to social participation. The main contribution to practitioners is that the results may contribute to a better understanding of the aspects that involve the adoption of d-governance through public agents. Moreover, the results obtained can serve as a reference for the definition of strategies that can mitigate the effects of structural and cultural barriers that influence the effectiveness of d-governance practices in government.

Considering the exploratory nature of this research, the results cannot be generalized. A study limitation is the fact that the interviews were conducted exclusively with the public administration agents of the direct administration in Brazil. It is important to expand the research scope to other branches of the Brazilian public administration as well as to know the citizens' point of view, as a way to identify the impact of culture variables that might hinder or strengthen DGP adoption. Studies that deepen the comprehension of the strategies identified as enabling the adoption of d-governance in public administration are also suggested as future research, as well as the impact of Web 3.0 on governments, citizens and on d-governance.

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