e-Participatory Budgeting as an initiative of e-requests: prospecting for leading cases and reflections on e-Participation

Rafael Cardoso Sampaio
Universidade Federal do Paraná / Departamento de Ciência Política
Curitiba / PR — Brazil

This article goes prospecting for some of the main experiences of using e-participatory budgeting (e-PB) that occurred between 2001 and 2013. We used the *snowball* technique to map out these occurrences. The aim of the study was to contribute to a better understanding of how such e-PB relates to other e-participation projects, in terms of participants, activities and the possibility of using mixed methods (online/on location) to mitigate any digital exclusion. The results indicated that there were 170 e-PB initiatives operating in 101 locations, of which 139 were mixed initiatives. Contrary to what is suggested in literature on the subject, most of these e-PBs do not address decision-making processes directly, but instead deal with the suggestions and requests of citizens (e-requests). The conclusion was then that the addition of ICTs to the e-PBs did not necessarily lead to an improvement in such processes. Nevertheless, one can argue that e-PBs can indeed offer new avenues and questions of relevance to the study of e-participation.

Keywords: e-participatory budget; e-democracy; e-participation; e-governance.

e-Orçamentos Participativos como iniciativas de e-solicitação: uma prospecção dos principais casos e reflexões sobre a e-Participação
Este artigo realiza uma prospecção das principais experiências de orçamentos participativos eletrônicos (e-OPs) realizadas entre 2001 e 2013. Foi utilizada a técnica "bola de neve" para mapear as principais ocorrências. O estudo visa contribuir para a compreensão de como os e-OPs se relacionam a outros projetos de e-participação, no que tange a participantes, atividades e a possibilidade de uso de métodos mistos (online/presencial) para mitigar a exclusão digital. Os resultados indicam a existência de 170 iniciativas de e-OPs em 101 localidades, sendo 139 iniciativas mistas. Ao contrário do que é apontado pela literatura, significativa parte dos e-OPs não concerne à decisão política diretamente, mas sim ao envio de sugestões e solicitações pelos cidadãos (e-Solicitação). Conclui-se que a adição de TICs aos

DOI: http://dx.doi.org/10.1590/0034-7612152210
Article received on July 17th, 2015 and accepted on June 9th, 2016.
[Translated version] Note: All quotes in English translated by this article's translator.
This article was written with the support of Fapemig. I thank Isabele Mitozo, Ana Angélica Soares and RAP's anonymous reviewers for their suggestions and revisions.

OPs não levou, necessariamente, a uma melhoria de tais processos. No entanto, defende-se que e-OPs podem oferecer novos caminhos e questões para os estudos de e-participação.

Palavras-chave: orçamentos participativos digitais; democracia digital; e-participação; governança eletrônica.

e-Presupuestos Participativos como iniciativas de e-solicitud: una prospección de los principales casos y reflexiones sobre la e-Participación
En este artículo se lleva a cabo una prospección de las principales experiencias de presupuestos participativos electrónicos (e-PPs) realizadas entre 2001 y 2013. La metodología para encuentro de los casos es la técnica "bola de nieve". El estudio trata de dar su opinión sobre cómo los e-PPs se relacionan con otros proyectos de e-participación, lo que se refiere a participantes, actividades y la posibilidad de usar métodos mixtos (online/presencial) para mitigar la brecha digital. Los resultados indican que hay 170 iniciativas de e-PPs en 101 lugares, con 139 iniciativas mixtas. Contrariamente a lo que dice la literatura, una parte significativa de los e-PPs no se refiere directamente a decisión política, pero a las sugerencias y peticiones (e-Solicitud). Se concluye que la adición de TICs para PPS no ha conducido necesariamente a una mejora de tales procesos. Sin embargo, se argumenta que e-PPs pueden ofrecer nuevas vías y cuestiones para estudios de e-participación.

Palabras clave: presupuestos participativos electrónicos; democracia digital; e-participación; gobernanza electrónica.

1. Introduction

Recent reflections on more democratic modes of governance proclaim the necessity of reducing the gap between political representatives and citizens, considering the latter capable of participating in political decisions when they receive due attention and all necessary resources (*e.g.* qualified information). Thus, governments should admit that it is their duty to represent the population's diffuse interests, preferences, and values, and that government actors (whether elected representatives or public servants and technicians) cannot expect to have all the solutions to each and every problem or challenge. Citizens' experience and knowledge are necessary resources for a better understanding of the problems or issues under discussion and the different interests involved (Ainsworth, Hardy and Harley, 2005; Coleman and Blumler, 2009; Shane, 2012; Van Dijk, 2012).

Since the mid-1990s, information and communication technologies (ICTs) have been used in order to allow citizens to participate in different phases of decision-making processes by public servants and government officials through what has been generally called online political participation (or e-participation). In such a perspective, it is believed that the Internet can make new room for successful participatory processes, since digital technologies may reduce participation costs. Likewise, online participatory processes would provide citizens with a greater amount of relevant information, as well as increase government's responsiveness through more feedback mechanisms, and potentially create better and more legitimate public

policies, possibly increasing population's trust on the political class (Macintosh and Whyte, 2008; Alves and Brelàz, 2015).

With the purpose to understand such phenomena, several comprehensive literature reviews on the different uses of e-participation, its applications, and what makes an instrument of e-participation successful or not in terms of public management, have been conducted (Sæbø, Rose and Flak, 2008; Aström and Grönlund, 2012; Medaglia, 2012; Susha and Grönlund, 2012). Particularly, these reviews included — without much emphasis — a specific e-participation program, namely, the electronic participatory budgeting (ePB).

The participatory budgeting (PB) in its contemporary format was created in 1989, in Porto Alegre, Brazil, and expanded to hundreds of different Brazilian cities (Wampler, 2008). Because of its capacity to include needy citizens in the complex budgetary processes and promote transformations in cities and public management, PB has been internationally recognized as a more democratic practice of governance (Smith, 2009; Wampler, 2008), being also recommended by international organizations such as UN Habitat and the World Bank (Sintomer et al., 2012).

ICTs are being used in different phases of PB since the 2000s in order to facilitate the political participation of citizens and the management of participatory processes by public managers. Nowadays, there are numerous examples of fully digital participatory budgeting processes in Brazil and around the world, all of which show advantages and disadvantages when compared to exclusively face-to-face programs (Peixoto, 2009; Best et al., 2010; Spada and Allegretti, 2013; Abreu and Pinho, 2014; Cunha, Coelho and Pozzebon, 2014; Alves and Brelàz, 2015). However, as with literature reviews concerning e-participation, PB prospections tend not to emphasize ePB processes, often highlighting only some exemplary cases (*e.g.*, Best et al., 2010; Sintomer et al., 2012; Sampaio and Peixoto, 2014). Considering this gap, the present research aims to advance the knowledge of ePB, taking the questions presented by the e-participation field.

Therefore, the article is structured in five sections. The first section presents a theoretical framework on e-participation and its main concerns relating to its participants, activities and how mixed methods are proposed in order to deal with the digital exclusion issue. The second and third sections present the methodology and the prospection results. Finally, the last sections articulate the results with the propositions on e-participation. Unlike what is proposed by the literature, the conclusion is that ePB processes represent not only forms of e-decision-making, but also platforms of e-request.

1. e-Participation

According to Sæbø, Rose and Flak (2008), most of the literature on e-participation suggests that technology facilitates or mediates the political activity extent or transformation, which generally means that: 1) more people, or a greater variety of people, can participate; 2) the

effect of the activity is intensified, or concentrated in new actors; and/or 3) the form of the activity is altered (Sæbø, Rose and Flak, 2008:416).

Thus, it conceptually means that:

> e-participation refers to the spontaneous employment of communication and information technologies by agents of the civil sphere in an attempt to influence the decision-making process so that its results create, increase or correct certain democratic value for the sake of the political community.[1]

The main studies and reflections on the subject of e-participation have tried to organize the aspects of greater significance in different works on the field by dividing them according to issues related to the actors involved or to third parties (*stakeholders*), e-participation activities, its applications and forms, contextual factors, effects of e-participation and its final evaluation. In this article, our choice was to briefly show the three main activities, and how the literature treats digital exclusion as composed by combined phases.

Regarding e-participatory activities, most reflections consider the several uses of ICTs in several forms of political participation. Three main forms are considered here: e-participation programs focusing on deliberation, consultation programs, and decision-making programs.

First, most of the e-participation theorists accept and use legitimacy principles of the deliberationist theory itself, that is, claiming that the legitimacy of citizens' participation in decision-making processes is dependent on citizens being capable of judgments based on public exchanges of arguments and reflections. Thus, one may note the existence of forums created for specific consultations of decisions (*policy forums*), as well as open forums for wide discussions that might or not be used by the political class (Janssen and Kies, 2005; Wright and Street, 2007; Coleman and Blumler, 2009; Smith, 2009).

Second, online consultations (or e-consultation) are forms of e-participation in which political agents, often governmental, use ICTs to assess citizens' opinions, wills and positions in relation to an issue (or a set of them) of public interest, or that deals with the management of the *res publica*, potentially creating better and more legitimate public policies, thus increasing the population's trust in the political class (Marques, 2010; Shane, 2012; Van Dijk, 2012).

Finally, to a greater or lesser degree, all e-participation activities are associated with decision-making instances. Therefore, literature tends to consider that there is a specific category of e-participation called e-decision making, related to the projects that are more connected to political decisions *per se*, that is to say, the use of ICTs in order to enable, increase or guide decision-making processes. In this category, among others, we could include the collective elaboration of public policy documents (Van Dijk, 2012; Cepik and Canabarro, 2014), introduction of citizens' opinions and feedback on public policies (Pinho, 2008; Aggio and

[1] The political community is understood as the sum of all different actors that make up the democratic game, namely: State, government and civil sphere (isolated citizens and civil society civic groups).

Sampaio, 2014; Alves and Brelàz, 2015), and digital participatory budgeting processes (Peixoto, 2009; Abreu and Pinho, 2014; Cunha, Coelho and Pozzebon, 2014).

While the advantages and benefits of e-participation are recognized, limitations should be noted, especially regarding digital exclusion. That is, depending on local realities, a substantial group of citizens might be deprived of the possibility of taking part in those previously mentioned activities. As such a group is often constituted of those who mostly need public policies and attention in general, e-participation could end in reinforcing the exclusion of the already excluded (Wilhelm, 2000; Ainsworth, Hardy and Harley, 2005).

A good deal of the literature on e-participation advocates that the use of mixed methods — processes with both online and face-to-face phases — tends to create more successful programs (Macintosh and Whyte, 2008; Sæbø, Rose and Flak, 2008; Medaglia, 2012). There is evidence that these mixed methods will tend to apply the best of "two worlds", mitigating the effects of digital exclusion (Aström and Grönlund, 2012).

Nonetheless, authors who have already analyzed mixed digital PB experiences point out the overlapping of phases, creating an unnecessary redundancy of citizens' collaboration, or even a negative competition between face-to-face and online participants. In this scenario, authors suggest that, as a rule, there is a tendency to give less emphasis/importance to ePB digital phases, which could suffer from lack of trust by traditional participants in face-to-face PB processes. vAlong with the difficulties faced by public managers in dealing with digital technologies, this lack of trust has had an impact on the not so used or innovative use of such technologies in PB processes (Spada and Allegretti, 2013).

In view of such issues, this paper presents a prospection of electronic participatory budgeting cases, and aims to promote a dialog between the results obtained and the principles previously mentioned.

2. Mapping of ePB processes

In summary, two main techniques were used to find and map ePB processes.

2.1 Quest via online search engines

A substantial part of this research lingered on *data mining* concerning the numerous ePB experiences around the world. There was extensive search for each and every piece of information about such processes, including academic journals and conferences, reports, articles, news stories and even posts in websites and blogs. In order to achieve that, traditional online search engines were used, such as Google, Bing and Yahoo, as well as academic search engines, such as Portal de Periódicos Capes,[2] Google Scholar and Science Direct.

[2] A digital academic papers repository owned by the Brazilian government.

Due to linguistic limitations, English was adopted as the main language for this search, which was reinforced by the fact that most of the articles and reports are written in English. Terms and combinations of "participatory budgeting" with indicators of its online nature were the search parameters: "on-line participatory budgeting", "on-line" AND "participatory budgeting", "digital participatory budgeting", "digital" AND "participatory budgeting", "electronic participatory budgeting", "electronic" AND "participatory budgeting", "virtual participatory budgeting", "virtual" AND "participatory budgeting", "web participatory budgeting", "web" AND "participatory budgeting". These keywords were also repeated in Portuguese, Spanish, French, and Italian.

During the search activity, it was noted that certain websites were repositories of accounts of e-democracy initiatives, or of participatory budgeting processes; the same search for keywords was carried out *via* the search engines of each website. The most useful ones were *Participedia*, *TechPresident*, *The Governance Lab*, *Democracyspot*, *Govfresh*, *International Budget Partnership*, *OIDP*, *Orçamento Participativo Portugal*, *Pan-European eParticipation Network*, *epractice*, and, in Brazil, *Rede OP* and *Biblioteca Virtual sobre Orçamento Participativo* (BVOP).

In most cases, after retrieving some references, it was verified the original website of the initiative. When it was not available, the website of the executive government, or the website of the civil society organization responsible for the process, was consulted. Those about which some substantial references were found are listed on the final database, even when there was no new relevant information. The database was formed with those findings, and also by evidencing missing information. These activities were conducted predominantly between October and December 2013.

2.2 The snowball technique

As it was desirable to have a sample as close to the whole population of existing cases as possible, it became evident that other methods of data collection would be necessary. There were limiting factors in the keywords concerning their capacity of detecting cases — especially when researchers, political activists and managers themselves chose to use specific expressions.

Given this situation, it was decided to apply a *snowball sample* technique. It aimed at individuals with specific scientific knowledge on ePB, or who have participated in ePB cases. Thus, the goal was to contact public administrators, officers, politicians, political activists, participants, or researchers who had knowledge on and data about cases of ePB processes already carried out.

Initially, Facebook groups (Participatory Budgeting, Participatory Budgeting in the UK, ICT4D, Eparticipation, IT Governance, ePartizipation, Association of Internet Researchers, International Association for Public Participation) and e-mail lists were the main

communication channels. Then, by recognizing the importance of certain civil society organizations in the implementation and promotion of PB processes (Sintomer et al., 2012), some of the leading organizations responsible for publicity with lines of work and research associated with PB in national and international levels were contacted. Emails were sent to *Buergerhaushalt* (Germany), *OP Portugal*, *Rede Presupuesto Participativo* (Spain), *The PB Unit* (United Kingdom), *Banco de Experiencias Locales* (Argentina), *Rede Brasileira de Orçamentos Participativos* (Brazil), *International Budget Partnership*, and *Observatório Internacional da Democracia Participativa*.

Finally, having gathered a reasonable set of documents and cases, the search for individuals was initiated. Using contact emails available in articles, reports and websites, 58 individuals were contacted, both researchers and ePB organizers.

It is important to clarify that the different ePB processes found were treated as occurrences, not as cases. Therefore, if the same locality has had many digital PB experiences, each of them was individually classified, aiming to highlight edition specificities and verifying the longitudinal nature of cases.

3. Results

Initially, it must be mentioned the difficulties faced in the research phase. As PB constitutes participatory procedures in budgetary processes through ICTs, it would seem evident and notable that the three fundamental pieces of information about any PB process are the following: budget, number of online participants, and number of face-to-face participants. However, research indicates the opposite. Indeed, out of a total of 170 occurrences located, only 47 of them had all data available online. That is to say, in 123 occurrences (72%), information to fill out the databasewas not found.

There is evidence that such information was presented to citizens in face-to-face meetings, which are common within governments. Accordingly, in some cases, information has not been published online. In many other cases, it is necessary to assume the limitations of this research technique, since the search engines that were used are not able to represent the whole Internet (for instance, Google search engine does not index the entire Internet, as it is supposed to), and in several cases, information may have been made available at a certain moment and removed afterwards. There is evidence that it occurred especially after government swaps.

3.1 Locality

Research found 170 references to occurrences of e-participatory budgeting processes in 101 localities. They are spread throughout 23 countries, as specified in table 1.

Table 1
Occurrences and localities of ePB processes organized in different countries

Country	Occurrences	Localities
1. Germany	13 (7.6%)	4
2. Argentina	9 (5.3%)	4
3. Australia	2 (1.2%)	2
4. Brazil	37 (21.8%)	17
5. South Korea	1 (0.6%)	1
6. Scotland	1 (0.6%)	1
7. Spain	10 (5.9%)	9
8. United States of America	3 (1.8%)	2
9. Estonia	1 (0.6%)	1
10. Finland	2 (1.2%)	2
11. France	1 (0.6%)	1
12. India	2 (1.2%)	1
13. England	7 (4.1%)	4
14. Iceland	1 (0.6%)	1
15. Italy	18 (10.6%)	14
16. Japan	5 (2.9%)	1
17. Mexico	1 (0.6%)	1
18. Peru	4 (2.4%)	2
19. Portugal	44 (25.9%)	25
20. Democratic Republic of the Congo	1 (0.6%)	1
21. Dominican Republic	1 (0.6%)	1
22. Republic of Cameroon	1 (0.6%)	1
23. Switzerland	5 (2.9%)	5
Total	170	101

Source: Elaborated by the author.

This measurement immediately evidences that the number of participatory budgeting processes that somehow use the ICTs is relatively small when compared to numbers of PB

processes around the world, which range between 795 and 1,469, according to research by Sintomer and contributors (2012).

Table 1 makes it clear that Portugal (n=44) and Brazil (n=37) are the countries in which forms of ePB were promoted the most in the prospected universe, and they also showed the greatest number of localities — 25 and 17, respectively. This result is expected in Brazil, which is the second country to present the most participatory budgeting processes (between 200 and 250), according to research by Sintomer and contributors (2012). Portugal's result is more remarkable because of its population and its reduced area, but it is living a specific moment of creation of several PB experiences throughout the country (Sintomer et al., 2012). There is, however, the extraordinary exception of Germany. According to Ruesch and Wagner (2013), there are 94 cases of PB processes that contain online phases in the country. Such cases were examined, but only 11 occurrences in four localities had available material in English to be found.[3] Consequently, if the data by Ruesch and Wagner (2013) is added to that of our database, it will become clear that Germany occupies the first place in the promotion of e-participatory budgeting processes.

Moreover, out of the 170 prospected practices of ePB, it was noted that 101 have been carried out in 32 localities. As the number of localities is 101, then 69 of the practices were "pilot" experiences, or some localities carried out only one ePB process, which represents almost 70% of the total.

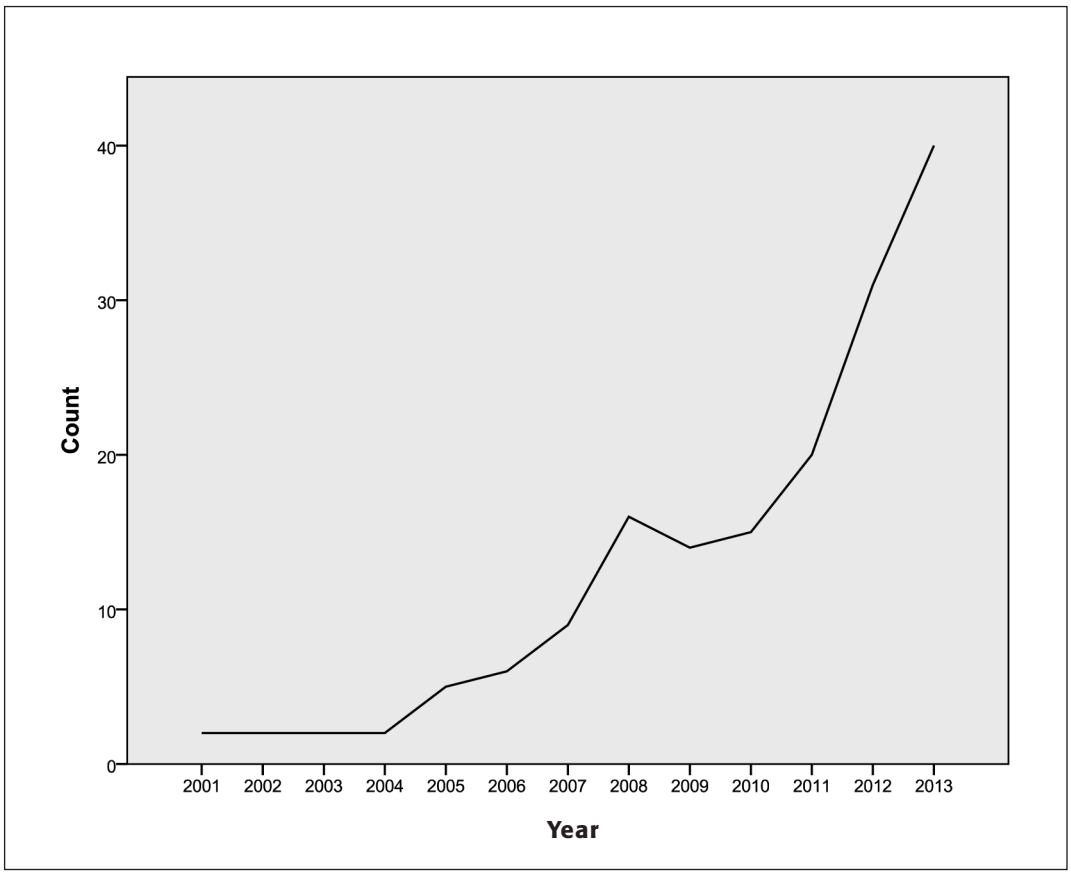
Following the same logic of face-to-face PB processes, ePB processes are carried out primarily in cities (about 75% of occurrences). If, on the one hand, this result was expected, on the other hand, the introduction of ICTs in such processes would tend to facilitate PB programs in wider regions (*i.e.*, fewer geographical and time restrictions to the participation), but these represent only 7% of the whole *corpus*.

3.2 Year

One advantage of this research is the possibility of a longitudinal examination, that is, to determine the rate of ePB occurrences throughout the years. There is evidence that the first experimental ePB processes happened in 2001, in the cities of Ipatinga and Porto Alegre, Brazil. With the dissemination of new technologies and their usage becoming more common among citizens and political officials, the expectation was an increase in ePB processes throughout the years, what is confirmed in graph 1.

[3] Therefore, the article does not present the results of most of German cases, which were located only in the final part of the research. They will be considered in a second stage of the study.

Graph 1
e-PBs per year



Source: Elaborated by the author.

The graph also indicates that, from 2009 on, the number of ePB occurrences increased annually and did not suffer setbacks until 2013, revealing an expressive strong tendency of growth from that moment on.

3.3 Mode

There are indications that many ePB experiences have a mixed or hybrid nature, containing face-to-face and online phases in their processes (Spada and Allegretti, 2013; Sampaio and Peixoto, 2014). In certain occasions, they seem to complement each other, but in others they seem to render the process more complex and polemic. Table 2 summarizes the state of the art.

Table 2
Online × mixed mode

	Occurrences	Percentage
Online	24	14.1
Mixed or combined	139	81.8
Valid total	**163**	**95.9**
No information	7	4.1
Total	**170**	**100.0**

Source: Elaborated by the author.

According to table 2, it is evident that ePB processes are still basically combinations of online and face-to-face phases. More than 80% of the prospected universe refers to these mixed experiences. Given the extension of the *corpus*, it was not checked which of the cases were face-to-face PB processes that came to adopt online phases, and which concerned PB processes that were already created with combined phases. On the other hand, several successful cases of mixed ePB processes have already been created to be multichannel, as is the case with Lisbon and Cascais (Portugal), Miraflores (Peru), and the main instances in Germany, namely, Cologne, Freiburg and Hamburg.

In turn, with regard to exclusively online occurrences, it is noticeable that they startedonly in 2006, and almost half of the total concentrates in 2013. This, however, does not necessarily indicate a tendency, because the year 2013 may be an outlier. Besides, it must be emphasized that the number of combined ePB processes still tends to increase, and the number of occurrences in 2013 was three times superior to that of exclusively online cases.

3.4 Number of participants

One of the greatest expectations concerning the use of information and communication technologies is an increase in the number of participating citizens (Peixoto, 2009). This is because ICTs are expected to reduce some of the costs of political participation. E-participatory budgeting processes are eminent examples of e-participation programs that combine face-to-face and online phases, and therefore are evident instances for a comparison between the numbers obtained per participatory module. The results of this comparison are shown in table 3.

Table 3
Face-to-face × online participants

	Face-to-face participants	Online participants
Occurrences	118	118
No information	52	52
Average	31,123.12	11,242.80
Median	665.50	1,335.50
Standard deviation	151,377.814	29,711.683
Minimum	6	8
Maximum	998,145	172,938

Source: Elaborated by the author.

Concentrating in the majority of cases, one can perceive that the median of online occurrences is superior to that of face-to-face ones. That is to say, it is observable that in ePB processes there was effectively a tendency of more online than face-to-face participation.

On the other hand, these numbers represent the aggregate of results of online and mixed ePB processes. When only the median of face-to-face and online participation in mixed ePB occurrences is considered, there is an inversion of the results. In this case, the median of the number of face-to-face participants[4] (1,094.00) is slightly superior to that of online participants (1,004.00). Thus, it is an indication that e-participation is not necessarily superior to the traditional one, but it also evidences that the number of citizens willing to participate in online phases cannot be ignored.

3.5 Availability of online tools

Aiming to understand the use of ICTs in ePB processes, the technical possibilities normally used the most in e-democracy projects and also in accounts of the most successful cases of digital PB were analyzed. Accordingly, the aim was to verify which cases used mobile phones, websites or social network application programs,[5] as well as which cases took special precautions against digital exclusion. The results are shown in tables 4, 5, and 6.

[4] As a rule, online systems required the participant's voter's ID number in order to avoid double voting, and the document should belong to the region at issue.

[5] As this research is longitudinal, it evidently deals with different scenarios of Internet access (either through mobile devices or not) and technologies available.

Table 4
Mobile phone usage in ePB processes

	Occurrences	Percentage
Yes	20	11.8
No	141	82.9
Valid total	161	94.7
No information	9	5.3
Total	170	100.0

Source: Elaborated by the author.

Table 5
Social network websites usage

	Occurrences	Percentage
Yes	18	10.6
No	143	84.1
Valid total	161	94.7
No information	9	5.3
Total	170	100.0

Source: Elaborated by the author.

Table 6
Precautions against digital exclusion

	Occurrences	Percentage
Yes	103	60.6
No	58	34.1
Total	161	94.7
No information	9	5.3
Total	170	100.0

Source: Elaborated by the author.

Although there are emblematic cases, most of the ePB processes (82.9%) did not use mobile phones. In exact 20 occurrences there was some sort of mobile phone usage, which corresponds to no more than 10% of the sample. Within these 20 cases, it is clear that the use of SMS is predominant (n=14). The mobile phone text messages were essentially used for engagement, as with the cases of Ipatinga, Yaoundé district VI (Republic of Cameroon), South-Kivu (Democratic Republic of the Congo), and Jarabacoa (Dominican Republic); and for voting, as happened in Cascais and Vila Franca De Xira (Portugal), Parma (Italy), Lambeth (England), La Plata (Argentina), and Belo Horizonte (Brazil). The use of mobile applications

in ePB processes was a most surprising verification. The only case happened in Belo Horizonte, where the *app* could be used for voting in the city's digital PB process.

Out of the 161 valid cases, only 18 used social network websites as a means of intervening and participating in the processes, being all of the cases associated with the use of Facebook, which indicates a still incipient use of social network websites and application programs in ePB processes.

Finally, one can observe that in most of the occurrences, there was some kind of precaution against digital exclusion. Particularly, cities like Belo Horizonte and Recife (Brazil), Bella Vista and Resistencia (Argentina) made public voting places available during their ePB processes, using electronic voting machines or computers with Internet access. In many Portuguese cases, as well as in Rio Grande do Sul, Brazil, besides online voting, there were public places where participants were able to vote or even hand suggestions in writing for the ePB processes. Thereby, it is evident that digital exclusion is still an important issue for public managers, who take specific measures in order to mitigate it during the execution of ePB processes. Contrary to all expectations, the elapse of years does not have a negative effect on this data.

In turn, only seven occurrences of ePB processes that generated open data were found in the whole sample. However, it is observable that six of them correspond to six editions of the Berlin-Lichtenberg ePB, which exports its information to the open data program of the city of Berlin. The seventh example comes from the district VI of Yaoundé (Republic of Cameroon), which sends its data to the open data national program. Future research should consider this result as a starting point for further investigation.

3.6 Function of digital tools

One of the most important aspects to be examined in relation to ePB processes were related to the functions of the digital tools. In the present study, we defined a primary and a secondary function[6] for the digital toolsavailable in ePB platforms.

Table 7
Main functions of digital tools

Function	Primary	Secondary	Sum
Engagement and mobilization	4 (2.4%)	4 (2.4%)	8 (2.3%)
Budget simulation	4 (2.4%)	6 (3.5%)	10 (2.9%)
Sending of suggestions or proposals	43 (25.3 %)	38 (22.4%)	81 (23.8%)

Continue

[6] The primary function is related to the possibilities that are offered to citizens willing to participate (e.g., to suggest, to debate, to vote, etc.). The secondary function is related to additional resources to the process that are offered (e.g., follow-up tools).

Function	Primary	Secondary	Sum
Deliberation	22 (12.9%)	7 (4.1%)	29 (8.5%)
Voting	90 (52.9 %)	15 (8.8%)	105 (30.9%)
Monitoring or assessment	0 (0%)	21 (12.4%)	21 (6.1%)
Inexistent	---	72 (42.4%)	72 (21.2%)
Valid total	163 (95.9%)	163 (95.9%)	326 (95.9%)
No information	7 (4.1%)	7 (4.1%)	14 (4.1%)
Total	170 (100.0%)	170 (100.0%)	340 (100.0%)[1]

Source: Elaborated by the author.

[1] The total number of occurrences in the database is 170. The number 340 simply indicates the sum of the total occurrences of primary and secondary functions, and its purpose is only didactic.

As these results suggest, voting and sending suggestions or proposals are the two outstanding categories as primary and secondary functions of digital tools. In the first group, the possibility of voting through ICTs was the most activated function, with 90 occurrences, which represented over 50% of the *corpus*. Sending suggestions and proposals and the deliberation practices came next, with 43 and 22 occurrences, respectively. As secondary function, in turn, the outstanding category was the sendingsuggestions, which presents 38 occurrences. The possibility of online monitoring or assessment comes next, with 21 occurrences.

This result is the main indication that the most common ePB model in the *corpus* was the "suggest and vote online". In short, these are ePB processes that allow one to send suggestions or proposals (*i.e.*, works to be done) for the budget in an initial phase. These proposals are usually collected and have their technical aspects analyzed by the PB political management agency. Subsequently, approved proposals for the next phases of the process are made available. In several ePB processes with combined phases, there were face-to-face meetings that filtered and treated these proposals, reducing or even adding options, and the PB process was concluded with a final voting phase, in which it was usually possible to vote via the Internet or a mobile phone (*i.e.*, SMS). Alternatively, another highly activated possibility was the "suggest online, participate face-to-face". After the suggestion was sent online, the possibility of e-participation was over, and the interested citizen should go to face-to-face meetings in order to discuss and approve public works.

It was observed that the level of sophistication of digital tools in both senses varied a lot in the sample. As a rule, executive agencies relied in simplistic alternatives. Sending suggestions for ePB processes were frequently done through website forms, similar to contact forms usually available in governmental websites. Another available option was receiving suggestions *via* email. Voting mechanisms did not show to be superior, being quite similar to online surveys. In most of the cases, the website was a "hot site", or even a website created exclusively for the ePB process of that year, being excluded later. In some cases, the ePB processes did not establish restrictions for a total of proposals that would be analyzed,

as is the case with Lisbon, which in 2013 displayed more than 200 options for citizens to choose their priorities.

Finally, as secondary function, 21 occurrences of digital tools and instruments that allowed the follow-up, monitoring or assessment of the process were registered. In several locations, these were tools that enabled a synchronous following of face-to-face meetings, also referred to as broadcasting of face-to-face meetings through a mobile phone or the Internet, as occurred in Málaga (Spain), Modena and Parma (Italy). In other places, information about the participatory processes was organized in specific websites, with the purpose to facilitate the access to data such as the number of participants and the most voted projects.

4. Discussion: ePB as a means of e-request

As previously mentioned, mapping the main requirements and practices of e-participation facilitates the understanding of the implications for the field. It is clear that the classification of ePB processes as activities of e-decision making has empirical support (most cases are about online voting), but in some cases it is not its main function. In fact, a substantial amount of ePB processes are actually advisory (at least as it concerns to the possibilities of online participation). That is, in many situations, digital tools are added to participatory budgeting processes as an endeavor to get more contributions from citizens, but not to augment their power in the decision-making process (ie. Select, vote, decide).

While it should be noted that the classification of ePB processes as e-participation activities was pertinent, many difficulties were faced in such a classification. On the one hand, it is clear that ePB processes are a kind of public consultation (insomuch that these cases were classified as e-consultation). On the other hand, citizens have greater power to define the agenda, which would approximate these ePB processes to online petitions. Nevertheless, ePB processes have several restrictions regarding types of suggestions that can be made, and there is a prior scheduling by the government about the scope of such proposals, even though it usually provides more freedom in the petition agenda.

Therefore, such ePB processes are conceptually situated between online consultations and petitions, but neither one or the other fully defines them. Apparently, it is possible that the ePB can fall into a category that has been scarcely used by the literature on the theme. Meijer, Burger and Ebbers (2009:105) suggest it reflects the moment when "citizens push the government to implement public policies properly"; Diniz and Ribeiro (2012) view it as platforms that stimulate "the creation of contents by the user"; while Aggio and Sampaio (2014) use the classification by Centro de Estudos Avançados em Democracia Digital (Ceadd-Ufba — Digital Democracy Advanced Studies Center):[7] "expression of civil claims".

[7] Ceadd comprises an international network of researchers.

These classifications are frequently associated with an e-participation category which is defined by channels that allow citizens to suggest improvements and present criticisms directly to the agents of the formal political system, which I call *e-request*. That is, *they are channels through which citizens shall present their requirements or even their suggestions for the improvement of the city*. These requirements tend to adopt the form of suggestions or practical requests, which are subsequently analyzed by the public management agencies. Examples would include the rebuilding of squares, streets, public buildings, or even the creation of public facilities, such as a multisport game court.

Internationally, the most evident example of this category is the *Fix my Street* website created by My Society, in the United Kingdom. In sum, the website aims to be a platform for the requesting of rebuilding or fixing streets and public facilities. Citizens interested to make a request or complaint includes very specific data, such as a clear description of the problem, suggestions for its solution, and its location. Pictures can be attached in order to illustrate the problem. This information is instantly geolocated by the website and, subsequently, sent to the liable public agencies.This initiative was embraced by the British government, and there is a considerable number of cases which have been processed through this system.[8]

In Brazil, *Urbanias* and *Cidade Democrática* are examples of this. *Urbanias* (already extinct) was basically a Brazilian version of *Fix My Street*. *Cidade Democrática* slightly amplify those possibilities. Users not only "complain" or report problems, but their digital forums are also used to allow registered citizens to discuss and bring about more robust proposals concerning possibilities of improvements for the city. Indeed, one of the goals of the website is to be a place where citizens can widely debate on their neighborhood (Baykurt, 2011).

In sum, this category — *e-request — is basically a digital system that allows direct communication between citizens and public authorities, through which citizens make their requests and public authorities answer through actions toward such requests.* However, it lacks empowerment at the high level. Governments take this input as requests or suggestions and may not work on them.

All of these characteristics allow us to assert that digital PB processes are also pertinent modes of e-request, though more complex ones. Just as in those digital platforms, citizens will be able to propose public works and give suggestions for their city. However, , there will be participatory meetings, public discussions, systems to filter submitted proposals, and usually voting processes in order to define the main suggestions for municipal inhabitants. Consequently, if a citizen is willing to do so, he or she will be able to make suggestions online; support and discuss them with other participants, managers and politicians, thus getting involved in the management of his or her city in many different ways. By doing this, citizens

[8] For a discussion about *Fix my street*, see Baykurt (2011).

may simply choose to limit their participation to the online mode, but being aware that their suggestions will be submitted to their peers and public authorities' evaluation.

As Spada and Allegretti (2013) have suggested, these combined systems may also result in extra difficulties. More public servants or technicians will be needed in order to deal with online and face-to-face suggestions – there is always a possibility of overlapping suggestions. Anyhow, even if the authors' criticism is adopted, ePB processes seem to be more complex multichannel systems than the existing e-request platforms.

Moreover, it is clear that the main existing examples of e-request found in literature were created by agents from the civil sphere. They achieved users, activity and some eminence, being subsequently adopted by governments (to a greater or lesser degree), and, thus, they are *bottom-up*. However, ePB processes reveal the reverse vector. These are initiatives that have been created and maintained by local governments that claim for citizens' participation through suggestions and requests.

5. Conclusion: results of ePB for e-participation

First, it is important to highlight that this research has limitations. Despite its endeavor to be as representative as possible of the universe of ePB cases available, the present study was limited by the outreach of the techniques themselves, and especially by the time dedicated to them. Definitely, a substantial number of ePB cases available is not considered here (as is the case with Germany). However, based on similar studies (*e.g.*, Wampler, 2008; Sintomer et al., 2012), this article primarily aims to display a panorama of the state of the art of ePB processes in the world, so as to facilitate future research to understand how the expansion of this category of participatory budgeting occurred.

Broadly speaking, results indicate that ePB is still in its early stages. Only 101 localities were found, which were responsible for 170 participatory processes between 2001 and 2013, and this is still of minor significance if compared with the number of cases of ePB processes around the world, which ranges between 1,269 and 2,778 (Sintomer et al., 2012:87). We also highlight that ePB processes are not necessarily tools and procedures of e-decision making, and they may be taken, in a considerable part of their total number, as consultative arrangements that tend to offer citizens the opportunity of requesting improvements, or even as modes of e-request.

In addition, during the prospection of cases and the analysis of tools, one could notice the disconnection between tools, online phases and face-to-face phases. Although being usually presented as innovative and capable of solving the problems of face-to-face processes, a general assessment made it clear that ePB processes are still experimental. And, contrary to what is constantly proposed in e-participation literature (Macintosh and Whyte, 2008; Sæbø, Rose and Flak, 2008; Medaglia, 2012; Aström and Grönlund, 2012), the introduction of face-to-face phases does not necessarily represent benefits to participatory processes. They only make the process wider and more complex.

In sum, the main problems found in e-participation initiatives, such as excessive pilotism (*i.e.*, initiatives that were taken only once, and then abandoned), institutional resistance (offered both by politicians and public managers), the inappropriate design of digital tools for online participation, and the absence of theorization (Macintosh, Coleman and Schneeberger, 2009), were also found in ePB projects. Also, the use of face-to-face phases did not seem to be sufficient to work out issues concerning digital exclusion or greater inclusiveness of participants. In practice, ePB processes demonstrate that context, political culture, political willingness and a good design of the participatory process and its digital tools are still the main determinants of the success or failure of an initiative.

On the other hand, considering the cases as a whole, it is possible to perceive a tendency of increase in the number of occurrences. While the use of combined phases has not resulted in totally successful initiatives, there surely seems to be a consensus that this is a viable alternative. If ePB processes can be already considered as modes of democratic innovation (Smith, 2009), it is feasible to assume that they go a step further in the attempt at innovation, especially concerning the use of new participation tools and the effort to attract new participants.

Bearing this in mind, combined ePB processes are indications of the forms through which managers and citizens first put e-participation tools to the test. More e-participation researchers should pay attention to the fact that ePB processes represent real experiences. Also, because lessons are learned when comparing their results with those obtained in experiences which were designed for very specific goals.

Finally, those who study e-participation should include ePB processes in their radars more often. In spite of their several limits and the fact that they do not effectively revolutionize e-participation, ePB processes are good examples of practical attempts to enable ordinary citizens to participate in the decision-making process for actual issues that are directly associated with their lives and involve one of the most important aspects of government: the budget. It is worthy to highlight the findings and contributions of the present study, compared to those obtained by most initiatives in digital democracy that have already been conducted so far, and which tend to resemble controlled laboratories of democracy rather than experiences with real effects on citizens' lives.

References

ABREU, Julio Cesar A.; PINHO, José Antonio G. Sentidos e significados da participação democrática através da internet: uma análise da experiência do Orçamento Participativo Digital. *Rev. Adm. Pública*, Rio de Janeiro, v. 48, n. 4, p. 821-846, jul./ago. 2014.

AGGIO, Camilo O. ; SAMPAIO, Rafael C. A democracia digital do gabinete do governador: o perfil e os limites de um modelo consultivo de participação. In: SILVEIRA, Sérgio A. da; BRAGA, Sérgio; PENTEADO, Cláudio (Org.). *Cultura, política e ativismo nas redes sociais*. São Paulo: Fundação Perseu Abramo, 2014. v. 1, p. 215-242.

AINSWORTH, Susan; HARDY, Cynthia; HARLEY, Bill. Online consultation: E-Democracy and E-Resistance in the case of the development gateway. *Management Communication Quarterly*, v. 19, n. 1, p. 120-145, ago. 2005.

ALVES, Fabiana R. R.; BRELÀZ, Gabriela de. Participação social e uso de TICS na revisão do plano diretor estratégico da cidade de São Paulo 2013-2023. In: CONGRESSO CONSAD DE GESTÃO PÚBLICA, VIII, 2015, Brasília. *Anais...*

ÅSTRÖM, Joachim; GRÖNLUND, Åke. Online consultation in local government: what works, when and why? In: COLEMAN, Stephen; SHANE, Peter M. (Org.). *Connecting democracy*: online consultation and the flow of political communication. Massachusetts: The MIT Press, 2012. p. 75-96.

BAYKURT, Burcu. Redefining citizenship and civic engagement: political values embodied in FixMyStreet.com. In: CONGRESSO DA ASSOCIATION OF INTERNET RESEARCHERS, XII, 2011, Seattle. *Anais…*

BEST, Nina et al. Internet e a participação cidadã nas experiências de orçamento participativo digital no Brasil. *Cadernos PPG-AU/FAUFBA*, v. 9, n. edição especial, p. 105-124, 2010.

CEPIK, MARCO; CANABARRO, Diego (Org.). *Governança de TI*: transformando a administração pública no Brasil. 2. ed. Porto Alegre: Editora UFRGS, 2014.

COLEMAN, Stephen; BRUMLER, Jay G. *The internet and democratic citizenship*: theory, practice and policy. Cambridge: Cambridge University Press, 2009.

CUNHA, Maria Alexandra V. C.; COELHO, Taiane Ritta; POZZEBON, Marlei. Internet e participação: o caso do Orçamento Participativo Digital de Belo Horizonte. *Revista de Administração de Empresas (RAE)*, v. 54, n. 3, p. 296, 2014.

DINIZ, Eduardo Henrique; RIBEIRO, Manuella M. O conceito de esfera pública interconectada e o site Webcidadania no Brasil. *Gestão & Regionalidade*, v. 29, n. 83, p. 97-111, 2012.

GOMES, Wilson. Participação política online: questões e hipóteses de trabalho. In: MAIA, Rousiley C. M.; GOMES, Wilson; MARQUES, Francisco P. J. A. *Internet e participação política no Brasil*. Porto Alegre: Sulina, 2011. p. 19-45.

JANSSEN, Davy; KIES, Raphael. Online forums and deliberative democracy. *Acta Politica*, v. 40, n. 3, p. 317-335, 2005.

JARDIM, José Maria. A construção do e-gov no Brasil: configurações político-informacionais. In: CINFORM — ENCONTRO NACIONAL DA CIÊNCIA DA INFORMAÇÃO, V, 2004, Salvador. *Anais...* Available at: <www.cinform.ufba.br/v_anais/artigos/josemariajardim.html>. Accessed on: 20 set. 2008.

MACINTOSH, Ann; COLEMAN, Stephen; SCHNEEBERGER, Agnes. eParticipation: The research gaps. In: *Proceedings of I International Conference on Electronic Participation*. First International Conference, ePart 2009. Linz, Áustria, September 1-3, 2009.

MACINTOSH, Ann; WHYTE, Angus. Towards an evaluation framework for eParticipation. *Transforming Government: People, Process and Policy*, v. 2, n. 1, p. 16-30, 2008.

MARQUES, Francisco Paulo J. "Muro baixo, o povo pula": iniciativas institucionais de participação digital e seus desafios fundamentais. *Opinião Pública*, v. 16, n. 1, p. 117-142, 2010.

MEDAGLIA, Rony. eParticipation research: moving characterization forward (2006–2011). *Government Information Quarterly*, v. 29, n. 3, p. 346-360, 2012.

MEIJER, Albert; BURGER, Nils; EBBERS, Wolfgang. Citizens4Citizens: mapping participatory practices on the internet. *Electronic Journal of e-Government,* v. 7, n. 1, p. 99-112, 2009.

NICO, Carpentier. The concept of participation. If they have access and interact, do they really participate? *Revista Fronteiras — estudos midiáticos*, v. 14, n. 2, p. 164-177, 2012.

PEIXOTO, Tiago. Beyond theory: e-Participatory budgeting and its promises for eParticipation. *European Journal of ePractice*, v. 7, p. 55-63, 2009.

PINHO, José Antonio G. Investigando portais do governo eletrônico de estados no Brasil: muita tecnologia, pouca democracia. *Rev. Adm. Pública*, Rio de Janeiro, v. 42, n. 3, p. 471-93, maio/jun. 2008.

RUESCH, Michelle Anna; WAGNER, Mandy. Participatory budgeting in Germany: citizens as consultants. *Relatório para Buergerhaushalt.org*, 2013.

SÆBØ, Øystein; ROSE, Jeremy; FLAK, Leif S. The shape of eParticipation: characterizing an emerging research area. *Government Information Quarterly*, v. 25, n. 3, p. 400-428, 2008.

SAMPAIO, Rafael C.; PEIXOTO, Tiago. Electronic participatory budgeting: false dilemmas and true complexities. In: DIAS, Nelson (Org.). *Hope for democracy*: 25 years of participatory budgeting worldwide. São Brás de Alportel: In Loco Association, 2014. p. 413-426.

SHANE, Peter. Online consultation and political communication in the era of Obama: an introduction. In: COLEMAN, Stephen; SHANE, Peter (Org.). *Connecting democracy*: online consultation and the flow of political communication. Cambridge: MIT Press, 2012. p. 1-21.

SINTOMER, Yves et al. Transnational models of citizen participation: the case of participatory budgeting. *Journal of Public Deliberation*, v. 8, n. 2, p. 1-32, 2012.

SMITH, Graham. *Democratic innovations*: designing institutions for citizen participation. Cambridge: Cambridge University Press, 2009.

SPADA, Paolo; ALLEGRETTI, Giovanni. *The role of redundancy and diversification in multi-channel democratic innovations*. In: AMERICAN POLITICAL SCIENCE ASSOCIATION (APSA), 2013, Chicago. Available at: <http://ssrn.com/abstract=2300683>. Accessed on: 17 jun. 2016.

SUSHA, Iryna; GRÖNLUND, Åke. eParticipation research: systematizing the field. *Government Information Quarterly*, v. 29, n. 3, p. 373-382, 2012.

VAN DIJK, Jan A. Digital democracy: vision and reality. *Public Administration in the Information Age*, v. 19, n. 1, p. 49, 2012.

WAMPLER, Brian. A difusão do Orçamento Participativo brasileiro: "boas práticas" devem ser promovidas? *Opinião Pública*, v. 14, n. 1, p. 65-95, 2008.

WILHELM, Anthony. *Democracy in the digital age:* challenges to political life in cyberspace. New York: Routledge, 2000.

WRIGHT, Scott; STREET, John. Democracy, deliberation and design: the case of online discussion forums. *New Media Society*, v. 9, n. 5, p. 849-869, 2007.

Rafael Cardoso Sampaio is Ph.D. in Contemporary Communication and Culture by Federal University of Bahia (UFBA). Associate professor of Political Science Department of Federal University of Paraná (UFPR). Researcher at Postgraduate Program of Political Science and Postgraduate Program of Communication at UFPR. E-mail: cardososampaio@gmail.com.