

# Enabling Multichannel Participation through ICT Adaptations for Participatory Budgeting

**Muhammad Mustafa Kamal**  
Brunel University London, UK  
Muhammad.Kamal@brunel.ac.uk

**Uthayasankar Sivarajah**  
Brunel University London, UK  
Sankar.Sivarajah@brunel.ac.uk

**Giovanni Allegretti**  
University of Coimbra, Portugal  
giovanni.allegretti@ces.uc.pt

**Michelangelo Secchi**  
University of Coimbra, Portugal  
michelangelosecchi@ces.uc.pt

**Sofia Autunes**  
University of Coimbra, Portugal  
sofiaantunes@ces.uc.pt

## Abstract

*Participatory budgeting (PB) represents a significant civic innovation of the last quarter-century. At a time when voter turnout in Europe was lagging and public institutions struggling to maintain trust and legitimacy within a framework of growing budgetary cuts, PB has proved itself to be a potential tool for citizens to join in the essential tasks of governing, not only as voters but also as decision-makers themselves. In line with this context, the authors present the concept of EMPATIA that seeks to radically enhance the inclusiveness and impact of PB processes, increasing the participation of citizens by designing, evaluating and making publicly available an advanced ICT platform for participatory budgeting, which could be adaptable to different social and institutional contexts. This paper also discusses the context of the three field trial sites and the expected outcomes of EMPATIA.*

**Keywords:** Participatory Budgeting, Inclusiveness, Participatory Decision-Making, Seamless Interoperability, ICT.

## Introduction

Participatory budgeting has received increasing attention by budget practitioners, researchers and academics as a significant area of modernisation in democracy and local development as well as a vital tool for inclusive and accountable governance (e.g. Cabannes, 2004; Sintomer *et al.*, 2008). Through PB, citizens across different countries have had the opportunity to gain knowledge of government operations, influence governance policies, and hold government accountable and to deliberate, debate and influence the distribution of public resources (e.g. Shah, 2007). For example, when PB was introduced in China, the Chinese government reformed its fundamental notions by describing PB as an agenda to restrain corruption, enhance governmental proficiency and improve national capacity (Collins and Chan, 2009). Other examples where the World Bank and UN agencies have supported in bringing PB to Asia and Africa include among others e.g. Turkey, Fiji, Senegal, Mozambique, and Zimbabwe (Baiocchi and Ganuza, 2014). PB becomes a tool of administrative incorporation, increasing participation and lessening contestation (He, 2011).

Despite the significance of PB, currently there is a limited amount of software designed for – or at least useful for – the implementation of PB. Existing solutions are usually developed for single PB

initiatives (Sampaio *et al.*, 2010) or limited in scope (i.e. supporting only a small subset of the various phases contained in the two cycles of PB). As a result, most PB initiatives disregard the potentialities of online participation empowerment, limiting themselves to Facebook, Twitter or other online simple forms or forums (Nitzsche *et al.*, 2012). The state-of-the art on ICT applied to PB is thus far limited and less advanced than the offline tools. From this point of view, many PB initiatives adopt improved and sometimes sophisticated forms of deliberative meetings, structured around consolidated methodologies, so that people with different ideas and opinions can meet at ease, debate and collaborate towards common goals. It usually does not happen on-line; therefore, redundancies and individualised participation tend to reduce the quality of deliberation, while new exclusions are created on the base of the different relations of citizens with resources as “free time” or mobility capacity (OECD, 2003). If many people experiment and take advantage of these meetings and methodologies, they show severe limitations in growing so to include entire local communities (Bittle *et al.*, 2009). This reduces the PB potential of completing the creation of that “*virtuous circle*” which is needed to restore trust and confidence of citizens in local institutions. In this context, two central component of legitimation are needed: (a) the qualitative component – consisting in a high level of deliberation and in the production of in-depth debate around contents of policies and projects advocated by participants and (b) the quantitative component – linked to the number and diversity of participants, provided that visibility and legitimation of a participatory process tend to increase when the number of participant does not appear as irrelevant by spread public opinion and has the capacity to make every citizens feel “*included*” thanks to the numeric significance and the demo diversity of those who have participated (Fernández and Francés, 2012).

The concept of EMPATIA (i.e. Enabling Multichannel Participation through ICT Adaptations for Participatory Budgeting) aims at improving the abovementioned limited scope of offline and existing online tools by studying, designing, implementing and evaluating new and renewed software tools for PB initiatives, gathered into a single integrated digital platform. The concept of EMPATIA is to develop an ICT enabled digital platform based on the model (as explained in detailed in the following sections) that not only seeks to improve existing tools, but also create new software modules that will increase their potential and reduce their limitations. Accordingly, EMPATIA will not only enrich ongoing and already tested PB initiatives (often scattered and not compatible in terms of technological components), but also integrate their online spaces to each other through the definition and implementation of new tools, and integration of interfaces and best practices (in terms of simplicity and capacity of being used by a large and differentiated range of actors with different cultural skills and degrees of ICTs alphabetisation). Thus, allowing local communities to interact to each other to possibly become a broader European community of practices.

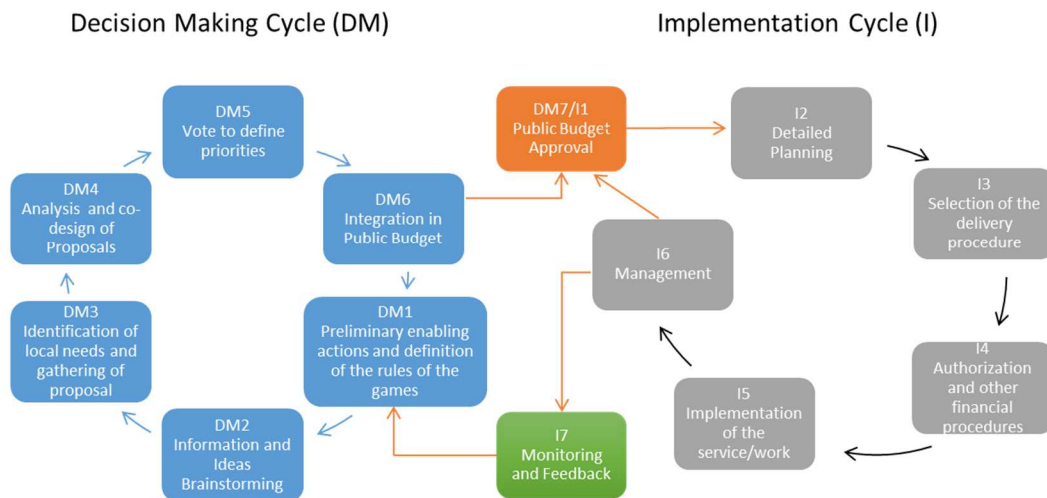
The rest of this paper is organised as follows. Following this introduction, the paper presents the conceptual background discussing on the significance of ICT in participatory budgeting. This is followed by a description of the EMPATIA model and a discussion highlighting the field trials and expected outcomes of EMPATIA. Finally, the paper concludes by highlighting the expected impact of the EMPATIA platform.

## **Conceptual Background**

### ***Significance of ICT in Participatory Budgeting***

According to Wampler (2007, p. 21), Participatory Budgeting is a “decision-making process through which citizens deliberate and negotiate over the distribution of public resources”. PB programs across the world are implemented at the directive of governments, citizens, non-governmental organisations, and civil society organisations to facilitate the citizens to play a direct role in determining how and where public resources should be disbursed. Moreover, specifically using the iconic definition of Appadurai (1991), we could consider Participatory Budgeting as an “*ideoscape*” i.e. the global flow of principles – more simply – signifying a political model which travels globally but exists through local appropriation. In fact, PB, after first being shaped during the 90’s in semi-peripheric Latin American countries, where it contributed to consolidating new democratic institutions, spread to Europe and Africa at the end of the millennium, often changing shape and meaning for its local experimenters. Though PB processes; since 1989, have experimented with a wide variety of rules, methodologies, and sequences, the majority of successful processes have adapted the same principles, including a sequence of steps in alignment with the basic framework depicted in Figure 1, comprising two key phases: the decision-making cycle (DM) and the implementation cycle (I). Such elements allow

considering PB a “*technology of participation*” with clearer and convergent rules worldwide, despite the large apparent difference that multiple experiments demonstrate around the globe.



**Figure 1. Participatory Budget Cycles**

The decision-making cycle is subdivided into seven distinct steps:

- DM1 – Preparation of basic rules, including the “pot of money” set aside in the public budget, eligibility rules for project proposals, and rules and processes by which citizens will participate;
- DM2 – Publication of these rules to the wider community and the provision of relevant information on past and current public expenditures to guide citizen proposals;
- DM3 – Development of initial project proposals by citizens, either singly or in public assemblies, often including a deliberation and voting process through which a selected group of proposals pass to the next stage of consideration;
- DM4 – Technical review of project proposals by public staff to determine eligibility, assess potential legal or practical conflicts, and recommend improvements to the proposals where possible;
- DM5 – Voting on final project proposals by the wider community;
- DM6 – Integration of the winning project proposals within the public budget framework;
- DM7 – Formal adoption of the public budget.

This final step in the decision-making cycle serves as the first of seven distinct steps within the implementation cycle:

- I1 – Formal adoption of the public budget;
- I2 – Detailed planning of project implementation, including a projected timeline, itemized budget, milestones, and work plans;
- I3 – Development of the delivery procedure, including eligibility rules and selection process for implementation partners and other third-party contractors;
- I4 – Selection of implementation partners and transfer of funds to begin operations;
- I5 – Implementation of the project work plan, constructing the facilities or creating the services envisioned in the selected project;
- I6 – Management of the new facilities or services in an ongoing manner;
- I7 – Monitoring and feedback, both to improve the implementation of already-funded projects and to guide any modifications of the decision-making process for future projects.

The use of ICT, with collaborative and participative technologies, is of paramount importance for promoting the inclusion of an increasing number of citizens in participatory initiatives such as Participatory Budgeting. Individualised participation (which is often responsible of reduced opportunities of interpersonal dialogue and poor outputs in term of projects and policies produced during the PB processes (Allegretti and Antunes, 2014) will not only be reduced thanks to new

collaborative solutions, but through new algorithms applied at the voting stage and useful to match similar ideas and opinions and to suggest them to the citizens. The development of relevant ICT tools will intervene in proposing a wide range of solutions to face two other common problems, which today are affecting many PBs which adopted on-line platforms to integrate the offline participatory procedures of voting priorities to be inserted in the budget:

- The serious problem which often attains to the adequacy of the voting software, especially in term of addressing the specific challenges of PB processes (fairer and better outcomes of voting processes), but also in term of granting security and authenticity of the voters (Ferreira, 2010) without giving up to make citizens feel their secrecy and autonomy respected by the public institutions which organize PB, considering that this is a central element which allows them to better trust the functioning of the participatory device (Allegretti, 2014a);
- The frequent lack of transparency and the poor quality of the information distributed by local authorities to support the phases of PB related to planning and debate alternatives and to decision making on more urgent priorities.

Under this perspective, EMPATIA will provide a wide range of opportunities to combine solutions to both issues, allowing forms of “*modular civic engagement*” through the use of progressive/incremental approaches to a deeper involvement of users in contributing to the quality of deliberation and outputs of the PB processes (Hall, 2012). Especially, EMPATIA will focus on providing opportunities to clarify “*a-posteriori*” and in understandable ways the use of public budgets (far beyond the often limited slice of expenditures in capital investment devoted to PB), so to contribute to two important goals:

- To strengthen the control of citizens on “*executed budget*” (so on the implementation of provision imagined during the phase of construction of provisional budgets, including the part devoted to PB)<sup>1</sup>.
- To challenge a worrying phenomenon, which literature has recently underlined, which show that “*open budgets*” (so practices intended to disclosure transparently the use of public budgets) tend to be more transparent in the phase of disclosing the “*budget formulation*” than in the phase of exposing the “*budget execution*” (Andrews, 2013). Such a gap allows to imagine a high degree of tokenism in the discourse around the transparency granted by the OBI systems for disclosure of public expenditures, which would have to be an important component and pre-condition of any participatory process that involve inhabitants in discussing and deciding on public budgets as PBs.

While facing such issues, EMPATIA will be careful to imagine solutions which could be extended beyond the device of participatory budgeting, although maintaining the ambition that the main peculiar principles distinguishing PB from other processes (starting from the strict integration between the citizens’ control on the institutions in the deliberation phase and in the implementation stages (Allegretti, 2014b) could maintain their centrality to enrich other different methodologies without being hidden or disappear.

## The EMPATIA Model

Nowadays, participatory budgeting processes resort to ICT for simplistic tasks such as online or text-based (SMS) voting, in which the actual platforms allow only for the visualisation or individual addition of proposals. As such, these ICT interventions foreclose any meaningful deliberation or collaborative refinement of the proposals themselves. Moreover, these systems are typically monolithic and suited to a single political/administrative context, offering very little room for improvement or extension. The EMPATIA aims at addressing these limitations in a concrete and practical fashion, being a foundation for research and development of innovative PB approaches, while exploring the possibilities given by modern ICT technologies.

EMPATIA does not aim to develop exclusively novel ICT components and tools but aims to use and adapt existing ICT components and tools in an integrated and novel manner to solve widely shared needs in managing participatory processes. In fact, its ambition is to produce a platform which could be useful not only for supporting PB as an isolated experiment of participatory decision-making, but

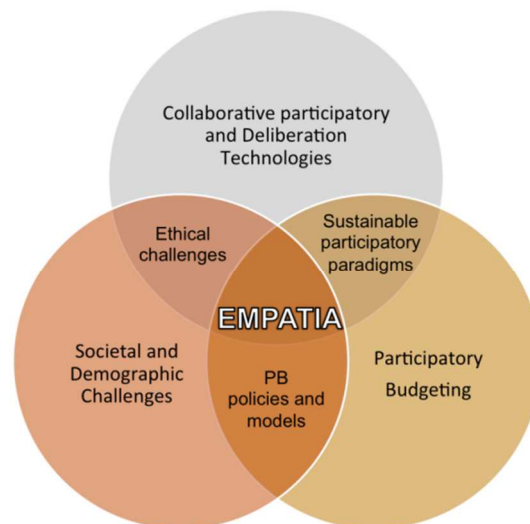
---

<sup>1</sup> The studies on the Index of Municipal Transparency (ITM) done by TIAC in 2013 and 2014 clearly show how few municipalities with PB in Portugal reach high degree of transparency in their budgetary and communication policies. See: <http://poderlocal.transparencia.pt/>

larger and interconnected “systems” of complementary participatory devices, which could count on PB principles as a pivotal pillar for their coordination. For this reason, EMPATIA will analyse and reuse results from past research and innovation activities, and link with ongoing projects and open-source software. The main goals of these links will be the support of the requirements gathering activity, including social, ethics, and legal aspects that are of paramount importance to EMPATIA (that will impact the methodology, models and the EMPATIA platform to be developed). For example, including among others, some existing projects and initiatives can be associated with the EMPATIA, e.g., BiPart is a software platform developed within the University of Milan (UNIMI) to support PB initiatives. It embraces the decision making cycle of the PB, allowing people to make, follow, and debate and vote for proposals. EMPATIA will extend and integrate BiPart components<sup>2</sup>. Another example is the use of UbiPOL which was a FP7 Project that developed a Ubiquitous Participation Platform for Policy Making. EMPATIA will analyse the results of this project in the concept of Policy Making and analyse how these results can support EMPATIA. Also this project has developed and integrated into their platform several ICT components and tools that can be analysed by EMPATIA and reused or adapted in the EMPATIA platform<sup>3</sup>.

The EMPATIA model, illustrated by

Figure , exploits the possibilities of integrating innovative collaboration and deliberation ICT technologies in participative actions such as Participatory Budgeting. Bearing this in mind, the societal and demographic challenges of employing ICT within PB are considered and further explored in the three municipal pilots.



**Figure 2. The EMPATIA Model**

EMPATIA’s digital platform will be designed according to the general requirements derived from the above-mentioned research work, as well as from the specific requirements and pilot use cases developed with each of the three municipal partners. One of the main issues in participatory initiatives, as well as of bottom-up decision-making processes, is the lack of knowledge made available to citizens, both with respect to the problems – those “*beyond their own backyard*” – and as to potential solutions (Elster, 1992; Elster, 1995; Fung and Wright, 2003; Dryzek, 2000). Citizens usually make self-interested claims that are differently perceived by others, sometimes resulting in conflicting and unsustainable manners. Attempts to solve the typical fragmentation of the society focus appointing representatives or speakers who are supposed to be experts and who are entitled to debate, find and finally vote the appropriate solutions. Despite all, citizens still struggle to access sufficient information on policy alternatives to cast a meaningful vote among a list of candidates, eroding the legitimacy of public institutions and reducing motivation for citizens to meaningfully participate therein.

<sup>2</sup> <http://www.bipart.it/>

<sup>3</sup> <http://www.ubipol.eu/>

Bearing this in mind the EMPATIA platform will exploit existing technologies that until now have been limited to e-Government tools, social platforms and marketing applications to enhance citizen participation in the two PB cycles (Decision Making and Implementation) and to enhance the characteristics of the common arenas which PBs tend to use for promoting mutual listening and shared visions among participants, as well as to take advantage of the positive effects of the “civilizing force of hypocrisy” (Elster, 1998) which emerges where real spaces of collective dialogue are created. The platform will be designed according to a modular framework in order to easily support future extensions and use cases not yet foreseen, and to promote reutilization of EMPATIA’s functionalities in other PB platforms.

Key areas where the EMPATIA platform will surpass the state of the art include the following:

- **Data Processing and Visualization** – by way of advanced algorithms and mechanisms for processing the critical data sets within a PB process (e.g. submitted proposals, open data sources related with the submitted proposals, and ongoing status of proposals selected for implementation) and automatically generating infographics, clear identification and presentation of existing proposals, similarities and content aggregation. These tools will support the evaluation of submitted proposals, the detection of similar proposals (opening the field for convergence), linking proposals with open data from related sources (e.g. transportation services, demographic statistics, public financial data) and the enhanced analysis of the whole PB process, including ex-post evaluation of implemented proposals.
- **Voting Systems** – The most appropriate voting systems to manage the final stage of PB processes will be studied, in order to support decisions as fair and shared as possible. Contents will be automatically aggregated across multiple sources (forums, idea gathering tools, etc.) and suggested to targeted people. Gamification and democratic incentives will be introduced to motivate participants to join and work together. A number of PB voting mechanisms will be supported, including existing mechanisms as well as new algorithms based on the research conducted by D21 to address the known limitations of current systems in expressing individual preferences and ranking proposals – with heterogeneous costs and impact – in a fairer manner.
- **Opinion Mining, Social Networking and Collaborative Processes** – Existing mechanisms and algorithms are able to identify patterns in citizens’ actions. Using these patterns the EMPATIA platform will support the citizens in their interaction with the system and participatory involvement, provide targeted information to support actions and avoid citizens’ disbelief and loss of interest. Social networking channels will also be established, both within the scope of the EMPATIA platform and linking it with mainstream social networks, in order to foster discussion and collaboration among participants – for instance for collaboratively improving and/or merging convergent proposals.

### **Field Trials and Expected Outcomes of EMPATIA**

EMPATIA will produce a “lab-to-market” user-centred platform, with its first end-users represented by three pilot municipalities (i.e. Bonn/Germany, Lisbon/Portugal, and Říčany/Czech Republic). These municipalities require not only solid evidence fulfilling privacy, data-integrity and confidentiality requirements, but also a set of integrated tools for enabling the two PB cycles. The system must allow easy and quick retrieval, filtering and voting of proposals, while also allowing citizens to add new proposals and contribute to existing ones, all in real time. The EMPATIA model aims to be flexible and adaptable to the municipalities’ needs, while requiring minimal maintenance effort after initial configuration and deployment. It will also be capable of maintaining adequate logs for auditing purposes, responding to needs for authentication and anonymisation where appropriate. The building blocks available at the beginning of the EMPATIA platform (e.g. natural language analysis tools and voting algorithms) will be at Technology Readiness Level 5 (TRL5), while other components will be initially at TRL6. The EMPATIA platform aims at reaching TRL7, performing tests and demonstrating the framework in operational environments – the three pilots to take place in three different municipalities.

Applying the comprehensive framework described above to PB processes in three pilot municipalities, the EMPATIA platform will seek to achieve the following eight outcomes:

- **Inclusion:** Using ICT to reduce barriers to citizen participation in both the decision-making and implementation cycles, including barriers related to digital skills, language, education level, visual impairment, location and time availability.

- **Deliberative Quality:** Using ICT to enhance the quality of PB deliberation by improving the flow of information, enabling the exchange of alternative proposals, and using advanced voting algorithms to more rapidly achieve consensus.
- **Efficiency:** Using ICT to streamline and optimize the investment of time and resources by facilitators and technical staff, so that they provide maximum support to the PB process for each unit of time and budget they commit.
- **Transparency:** Using ICT to enable the two-way flow of meaningful information between government and citizens at all stages of the PB process, and especially during the implementation process, often disregarded in current PB practices. At the same time, relate the process to a larger framework of open data related to general budgetary issues of the local administration concerned (both in terms of provisional as well as executed budget).
- **Integration:** Using ICT in such a way that online and in-person processes fit seamlessly together, and that PB activities are integrated with other governance innovations, including open data and existing e-Government tools.
- **Replication & Adaptation:** Using ICT to pave the way toward the diffusion of a next generation of PB processes, which can meet the highest standards of deliberation, selection, and implementation in other contexts and at greater scale.
- **Enhanced Evaluation:** By using the EMPATIA platform to record the whole PB process, including decision making and implementation cycles, it becomes possible to build extensive datasets of PB processes, both for supporting new PB processes (allowing involved communities to self-assess the impact of their own previous deliberations and to learn from the past experience of other communities) and for supporting more methodical research studies on PB.
- **Marketability:** The exploration of business models to accelerate and amplify these innovations.

## Conclusions

The proposed concept of multichannel participatory budgeting through an ICT platform (EMPATIA) has the potential to be far reaching, with impact realised well beyond transactional boundaries through to having transformational impact manifested through propagating a culture of transparency and participation that is realised by individuals, social groups, communities and even at a national/transnational level. Such impact has societal as well as technical effects, with the potential to make a difference to the experiences and civil society. The underlying expectations of EMPATIA stem back to creating and then advocating a process of democratic deliberation and decision-making; and a type of participatory democracy, in which citizens decide how to allocate part of a municipal or public budget. Such engagement where priorities are developed raises the scope of breath and depth of impact through not only creating a culture change where all voices are heard but also in raising expectations of Government whether through policy or direct funding resources.

The contributions of this research will be of benefit to both academics and practitioners engaged in PB research especially in the e-Government context. Theoretically, this paper contributes to the current understandings of e-Government literature in terms of the use of ICT to provide an integrated PB platform to citizens and public organisations. From a practical perspective, the paper offers valuable insights into the concept of an innovative PB platform for public administrations by highlighting that the approach and methodology for achieving the goal of PB is not only to achieve technological advancements in future participatory actions but also resulting in a measurable augmentation of the social impact of such actions. The broader societal and nationalistic impact of EMPATIA platform is also expected to be felt through changes in engagement in the democratic process through grass-root level demonstrations of being able to make a difference in the prioritisation of resource deployment. Through supporting the EMPATIA approach to participatory budgeting, the platform seeks to demonstrate significant societal impact through creating an infrastructure that gives power to make real decisions about how in a transparent way tax revenues are spent in communities. In doing so, elevating societal consciousness around engagement in the democratic process through creating mutual trust with local governments and citizen, who can benefit equally from such co-creation of community funded priorities. The ultimate impact of EMPATIA platform is to in changes societies' willingness to pay their taxes through being transparently involved in the spend-and-benefit process.

## References

- Allegretti, G. and Antunes, S. 2014. "The Participatory Budgeting of Lisbon: results and perspectives of an experience in slow but continuous transformation", FACTS Report - Civicus - Special Issue 11 (2014): Stories of Innovative Democracy at Local Level.
- Allegretti, G. 2014a. "Os orçamentos participativos sabem escutar? Reflexões para reforçar a sustentabilidade dos orçamentos participativos", in Kátia Cacilda Pereira Lima; Francisca Rodrigues de Oliveira Pini (org.), *Orçamento Participativo: Múltiplos Olhares*. S. Paulo (2014, Paulo Freire Editora): 142-207.
- Allegretti, G. 2014b. "Paying attention to the participants perceptions in order to trigger a virtuous circle", in Nelson Dias, (org.), *Hope for Democracy. 25 Years of Participatory Budgeting Worldwide*, 47-64.
- Andrews, M. 2013. "Opaque Transparency and Transparent Opacity in African Budget Systems", in the blog: [http://matthewandrews.typepad.com/the\\_limits\\_of\\_institution/2013/09/opaque-transparency-and-transparent-opacity-in-african-budget-systems.html?utm\\_content=buffer2f68e&utm\\_source=buffer&utm\\_medium=twitter&utm\\_campaign=Buffer](http://matthewandrews.typepad.com/the_limits_of_institution/2013/09/opaque-transparency-and-transparent-opacity-in-african-budget-systems.html?utm_content=buffer2f68e&utm_source=buffer&utm_medium=twitter&utm_campaign=Buffer)
- Appadurai, A. 1991. "Global Ethnoscapes: Notes and Queries for a Transnational Anthropology", in R. Fox; Santa Fe, N.M (eds.), *Recapturing Anthropology: Working in the Present* (School of American Research Press, 191-210.
- Baiocchi, G. and Ganuza, E. 2014. "Participatory budgeting as if emancipation mattered", *Politics & Society*, 42(1), 29-50.
- Bittle, S., Haller, C. and Kadlec, A. 2009. "Promising Practices in Online Engagement. Occasional Paper, Center for Advancement of Public Engagement", Available Online: [http://www.publicagenda.org/files/PA\\_CAPE\\_Paper3\\_Promising\\_Mech2.pdf](http://www.publicagenda.org/files/PA_CAPE_Paper3_Promising_Mech2.pdf)
- Cabannes, Y. 2004. "Participatory budgeting: a significant contribution to participatory democracy", *Environment and Urbanization*, 16(1), 27-46.
- Collins P, Chan. HS. 2009. "State capacity building in China: an introduction", *Public Administration and Development*, 29, 1-8
- Dryzek, J. S. 2000. *Deliberative democracy and beyond: liberals, critics, contestations*. Oxford University Press.
- Elster, J. 1992. *Arguing and Bargaining in the Federal Convention and the Assemblée Constituante*, in R. Malnes and A. Underdal (eds), *Rationality and Institutions* (Universitetsforlaget).
- Elster, J. 1995. *Strategic Uses of Argument*, in Kenneth J. Arrow, R. H. Mnookin, L. Ross, A. Tversky and R. B. Wilson (eds), *Barriers to Conflict Resolution* (W.W. Norton): 237-257;
- Elster, J. 1998. *Deliberative Democracy*. Cambridge University Press.
- Fernández, E. G. and Francés, F. 2012. *El círculo virtuoso de la democracia: los presupuestos participativos a debate* (Colección Monografías CIS, Madrid).
- Ferreira, D. E. S. 2010. *Inclusão, Participação, Associativismo e Qualidade da Deliberação Pública no Orçamento Participativo Digital de Belo Horizonte. Paper presented at the 34<sup>th</sup> Meeting of ANPOCS - Associação Nacional de Pós-Graduação e Pesquisa em Ciências Sociais*.
- Fung, A. and Wright, E. O. 2003. *Deepening Democracy. Institutional Innovations in Empowered Participatory Governance*.
- Hall, M. 2012. "Modular civic Engagement, in Collaborative Study Lab. Thoughts on civic technology and open government", Available Online: <http://collaborativestudy.tumblr.com/post/19354059546/modular-civic-engagement>
- He, B. 2011. "Civic engagement through participatory budgeting in China: three different logics at work", *Public Administration and Development*, 31(2), 122-133.
- Nitzsche, P., Pistoia, A. and Elsäber, M. 2012. "Development of an Evaluation Tool for Participative E-Government Services: A Case Study of Electronic Participatory Budgeting Projects in Germany", *Administrație Și Management Public*, 18, 6-25.
- OECD, 2003. "The Case for e-Government Excerpts from the OECD Report – The e-Government imperative", *OECD Journal on Budgeting*, 3(1), 61-96.



- Sampaio, R. C., Mayan, S. P. C. and Marques, F. P. J. A. 2010. "Participation and deliberation on the Internet: A Digital Participatory Budget case study of Belo Horizonte", *Public Opinion*, 16(2), 446-477.
- Shah, A. (Ed.). (2007). Participatory budgeting. World Bank Publications.
- Sintomer, Y., Herzberg, C. and Röcke, A. 2008. "Participatory budgeting in Europe: potentials and challenges", *International Journal of Urban and Regional Research*, 32(1), 164-178.
- Wampler, B. 2007. A guide to participatory budgeting. In Shah, A. (Ed.). Participatory budgeting. World Bank Publications.