DOI: 10.30680/ECO0131-7652-2020-9-62-85

E-Participation as a Vector of Developing Participatory Budgeting[1]

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JEL H61, H72

Abstract. Participatory budgeting, as a form of participation and involvement of citizens in urban budget planning, is becoming an increasingly popular form of interaction between power structures and the population thanks to rapidly developing tools of the electronic participation format. The purpose of this paper is to analyze the prospects for further development of electronic public participation (e-participation) in participatory budgeting. The systematization of foreign experience of e-participation helped to identify the most promising tool of electronic voting as well as factors of its long-term success. The author proposed an algorithm for implementing participatory budgeting projects including e-participation tools and studied the experience of Russian regions. The procedure of Internet voting in participatory budgeting is transparent and reliable thanks to the advantages of block chain technologies. The key problem of low reliability of voter verification is resolved by identifying voters with their accounts in the Unified Identification and Authentication System (ESIA) of the public services portal. The paper assesses the technical readiness of the Russian population for e-participation, revealing a positive relationship between Internet access and the quality of public services.
Keywords: information and communication technology; public administration; proactive budgeting; participatory budgeting; electronic public participation; electronic voting

Introduction

The actuation of digital technologies in various fields comprising public administration becomes an important factor in moving forward the country's economy. Initially, the notion of e-government mostly signified free access to information. Lately, however, the priority is shifting towards electronic document flow [Vasilyeva, Kononenko, 2016. P. 10] and incorporation of service components into public administration.

One of the fastest global trends related to insertion of information technologies into public administration is Participatory Budgeting that

[1] Published in accordance with the public assignment for the Federal Publicly Funded Institution of Science, Institute of economics of UB of RAS for 2020–2022.

empowers citizens to control a part of local budget expenditures. In Russia this kind of interaction between public bodies and population appeared in 2007 under the auspices of the World bank's project "Program of local initiative support" and became known by the term "Initsiativnoye biudgetirovanie" or "proactive budgeting" (PaB).

There is no single definition of Participatory Budgeting shared by all scientists. In broad terms it represents "a democratic process whereby citizens participate in distribution of a share of public funds" [Miller et al., 2019].

According to the Ministry of Finance definition, the practice of Participatory Budgeting encompasses "a series of steps implementing mechanism and procedures of citizens' participation in budget decisions as indicated in legal norms and guidance documentation of an RF subject or municipality". This implies that, among other things, the procedure of implementing projects of participatory budgeting in Russia is not unified and stems from regional legislation including public programs (at the start of 2019, corresponding norms were adopted in 33 subjects of RF)[2].

"The concept of improving the efficiency of budget expenditures in 2019–2024"[3] approved in January 2019 explains the necessity of taking measures to enhance the transparency of and involve civic institutes into the budgeting process. One of the principal factors suppressing participatory budgeting, according to the authors of the concept, is poor information support in federal subjects and municipalities that leads to low public awareness of this tool.

That is why, in order to raise public involvement in the budgeting process, various platforms and services are cropping up that put forward, discuss, and allow online voting on PB projects in social media. Ye.A. Kapoguzov and S.A. Revyakin, 2019. P. 29] define public participation platforms as "a channel built on information and communication technologies for remote public participation in government decision making that presumes a two-way communication, allows citizens to voice their opinions, formulate agenda and alternatives for voting". The trend for introducing

[2] The best practice report of participatory budgeting in RF regions and municipalities. Ministry of Finance of RF. M., 2018. 56 p.

[3] The concept of raising efficiency of budget expenditures in 2019–2024 published on 21 January 2019 № 117-p.

information technologies in the field of public administration at the federal level is supported by the state program "Digital economy"[4].

Incorporating e-participation into participatory budgeting has long become the international practice. As demonstrated in some countries, it does not by itself guarantee total success. A major part of work starts at the next stage, which is spreading and permanent use of tools for e-participation by broad public [Allegretti &Antunes, 2014; Naranjo-Zolotov et al., 2019].

The goal of this paper is to analyze the outlook for public e-participation in participatory budgeting.

The basis and methodology of research

The first part of the paper considered the systematization of the world practice of e-participation in participatory budgeting as seen through the results of international and domestic research in this field. This allowed us to identify the most promising and universal tools of e-participation in budgeting matters including those potentially applicable to Russian conditions.

Further on, the author suggested the algorithm of implementing tools of electronic interaction between power bodies and the people at different stages of participatory budgeting projects. This algorithm is based on the sequence of implementation for participatory budgeting projects recommended by the Academic research financial institute of Finance Ministry of RF.

Evaluation of readiness of authorities and the public for a transition to electronic interaction in participatory budgeting was based on bilateral research. First, the author appraised the readiness of authorities towards the implementation of tools for electronic public participation in participatory budgeting by employing the notion of 'e-government infrastructure' suggested by A.N. Shvetsov [Shvetsov, 2019. P. 14]. The empiric basis of research comprised the data from official sites of regional administrations relative to the development of PB as well as results of implemented online voting in Nizhegorodskaya and Volgogradskaya regions, where block chain platform Polys from "Kaspersky Laboratory" was used.

[4] The national program "Digital economy". Approved by the decree of President of RF from 07.05.2018 № 204 "On national targets and strategic tasks of developing the Russian Federation for the period to 2024."

To evaluate the readiness of our population for electronic public participation we used a dispersion diagram on indicators of quality of extended services and access of households to the Internet in Russian regions based on rating data of the quality of state and municipal services in the e-form compiled by the Ministry of economic development of Russia as well as Rosstat data on the accessibility of the Internet for people in Russian regions.

International experience of electronic public participation

Participatory budgeting was born in Brazil at the end of the 1980-s when the country lived through a transition from dictatorship to democracy. It was a public discussion of new constitutional forms of civic participation in administrative decisions that had to become one of its manifestations [Avritzer, 2006]. In 2006 the Brazilian city of Belu-Orizonti put forward the first opportunity of electronic voting for projects financed from the budget funds and which significantly raised the level of public awareness of this issue. The initiative turned out to be so successful that it became an annual practice. However, as time went by the public activity started to decline. The number of participants in online voting dropped from 172 938 in 2006 to 25 378 in 2011.

Looking into reasons for such a sharp drop in public participation, S. Coleman and R. Sampaio [Coleman, Sampaio, 2017. P. 19] concluded that some factors that play a major part in people's motivation and e-voting process organization had been neglected. First of all, citizens who vote need to feel that they belong to a certain community being its important part (such perception is achieved i.a. through citizen's registration and identification in the voting system). Secondly, to maintain the citizens' activity they need to have opportunities for discussion and use of social networks. Thirdly, people need to be reassured about the democratic nature of the voting procedure and that its results have a direct impact on decisions made by authorities. The success of this factor depends on the transparency and integrity of the voting procedure and implementation of its results.

At the moment, various countries of the world spend significant efforts to launch a variety of forms involving citizens in budgeting through information and communication technologies (Fig. 1). The wide spread of smartphones and tablets with broadband mobile Internet together with their portability ensures easy access and

convenience of online interaction of citizens with local authorities [Fathejalali, 2017].

According to a UN report, 85% out of a sample of 40 big cities from all over the world have already implemented functions of online communication with the population through social networks, 55% hold online discussions and 23% of municipalities employ e-communication in projects of participatory budgeting (PB)[5] (Table 1).

Table 1. **International practices of civic participation in budgeting through electronic technologies**

State	Type of interaction with the public	Accomplishments
Korea	Two innovative mechanisms of civic participation: 1) collection of opinions on ministerial programs from political experts and public representatives and finding cases of non-justified expenditures. Cutting budgets of projects with low grades; 2) launch of a website that represents public opinions on excessive spending and illegal appropriation of budget funds. The public is awarded for valid feedback. A hybrid approach: online and local space for participation in PB projects, used since 2008. Texting communication for PB. Consideration of voting via ATMs in the future. Growing success and popularity of this tool due to the possibility of e-voting on projects.	Over the period from 1998 to 2013, more than 2000 cases of non-justified expenditures were discovered that allowed saving about $13 billion of budget funds.
Portugal (Lisbon)	Project areas: science, culture, education, additional education for adults, and agriculture	In 2016, 362 online proposals, 205 – at open meetings. 51 thousand voted (>9% of the total population)
Brazil	In 2006, an alternative web participation project was launched, whereby a citizen identified as a participant could vote online for 42 days for 9 out of 36 projects to be implemented. An opportunity for a virtual city trip via a PB website to inspect and discuss submitted projects for online voting 152 digital centers were set up in local communities for voting. In 2011, the voting program improved, votes were verified via e-mail. Project areas: roads, street lighting	In 2006, 10% of active voters took part in e-PB compared to 4% in person in 2005/2006
Italy (Milano)	Applied since 2015. Preference is given to online voting. 3% of Milano citizens took part in the very first year of voting. Voting results are published on site. Project areas: school building renovation, upgrading of squares and parks,	Since 2015 online voting is preferred: 16 thousand votes online, 1 thousand – offline
Spain	A platform of civic participation 'Decide Madrid', which includes 4 stages: project proposal, voting, public discussion, consultations, budget distribution. PB promotion included an awareness-raising campaign worth 200 thousand Euros. A clear trend: the bigger the municipality the higher likelihood of digital participation tools used. Project areas: territory upgrading	In 2017, 67 thousand voted

Source: the author used [Friedman,2016; Naranjo-Zolotov et al., 2018; Coleman & Cardoso Sampaio, 2017; Matheus et al.,2010; Zakharchuk et al., 2019; Sintomer et al., 2012; Gavrilova, 2018; Garsia, Puertas, 2018].

[5] United Nations. (2018). E-Government Survey 2018. Gearing e-government to sup- port transformation towards sustainable and resilient societies. New York. P. 270.

In most international practices of participatory budgeting we studied, electronic participation helped raise popular involvement in decision making over spending budget funds and increased the number of overall participants. However, results also depend on the peculiar features of countries that may restrict popular participation.

For instance, in Japan public participation in budgeting is constrained by the citizens' mentality: in Japan it is difficult to discuss serious questions or vote at a meeting because it is not 'a Japanese custom'. The fear of a Japanese person to contradict a majority of the group he or she belongs to makes them unable to express their opinion in public [Uddin et al., 2019. P. 491].

The international practice exposed as inefficient such forms of electronic interaction as online comments and addressing authorities by e-mail. We believe that the lack of success of such forms of participation comes from the same reasons that led to declining public participation in Belu-Orizonti. Moreover, the authorities bear no responsibility for any feedback whatsoever (e.g. reply to comments or letters).

Some authors addressing the democratization of participatory budgeting express opinions that procedures of participatory budgeting tend to be reflexive and are difficult to change. So, authorities in many countries find it hard to interact with the community. Thus, Ye. Alexandrov and his co-authors [Aleksandrov et al., 2018. P. 1114] proved that only the inclusion of disputing procedures and critical review of actual projects allows interaction between municipalities and community activists. In this regard, online interaction removes a barrier between budgeting participants and involves people in decisions over budgeting issues.

The first Russian region that implemented the technology of participatory budgeting in 2007 was Stavropolsky territory. In 2011 it was joined by Kirovskaya, Tverskaya, and in 2013 Nizhegorodskaya and other regions. A peculiar feature demonstrated by the Russian practice of participatory budgeting is the higher involvement of rural settlements in Russian regions whereas it is the urban population that is mostly involved in other countries of the world [Gridin, 2016. P. 47; Kolesnik, 2017. P. 43].

Monitoring of practices implemented in regions and development of evaluation of participatory budgeting in Russia is supervised by the center of participatory budgeting of ARFI of Finance Ministry

of Russia. Thus, in 2018, according to ARFI, participatory budgeting involved over 50 subjects of the Russian Federation (in 2017–43, in 2016–27). Among procedures used for selecting winning projects in RF regions, Internet voting is in the third place. Such Internet voting includes anonymous voting on municipal sites, polling at social networks, and regional portals as well as most secure variants with verification through the Single system of identification and authentication (Table 2).

Table 2. **The procedure for selecting winning projects in RF regions**[6]

The procedure for selecting winning projects	Number of RF subjects using the procedure	Number of acts of civic participation as part of the procedure
Commissions of authorities' representatives	46	0
In person voting at meetings	41	1 260 482
Internet voting on projects	15	726 171
Citizens' commissions	8	20 769
Referendum	3	1 128 567
Other mechanisms	20	1 545 240

A significant trend of further development of participatory budgeting in Russia is the digitalization of these processes as digital technologies guarantee security and transparency of citizens' selection of projects for financing [Vagin, Shapovalova, 2020]. We need to evaluate the commitment of the authorities and the public to go forward with implementing digital technologies into participatory budgeting. There are two tasks to resolve here. On the one hand, this concerns the capacity of regional and local administrations to set up infrastructure favorable for electronic interaction. On the other, it is about society's willingness to collaborate with the authorities via online tools.

Figure 1 represents step by step the general algorithm of implementing projects of participatory budgeting that includes tools of electronic public participation. The second and tenth steps represent providing information to citizens on opportunities of PB and submission of photo reports on ready projects. These steps are nowadays performed with information-communication technologies (ICT). Steps 1, 4, 7–9 embrace the process of elaboration and implementation of projects that do not presume electronic interaction

[6] The best practice report of participatory budgeting in RF regions and municipalities. ARFI of Ministry of Finance of RF. M., 2019. P. 15.

between participants. Steps 3, 5–6 that comprise direct interaction of people and authorities may, in the future, become fully digital.

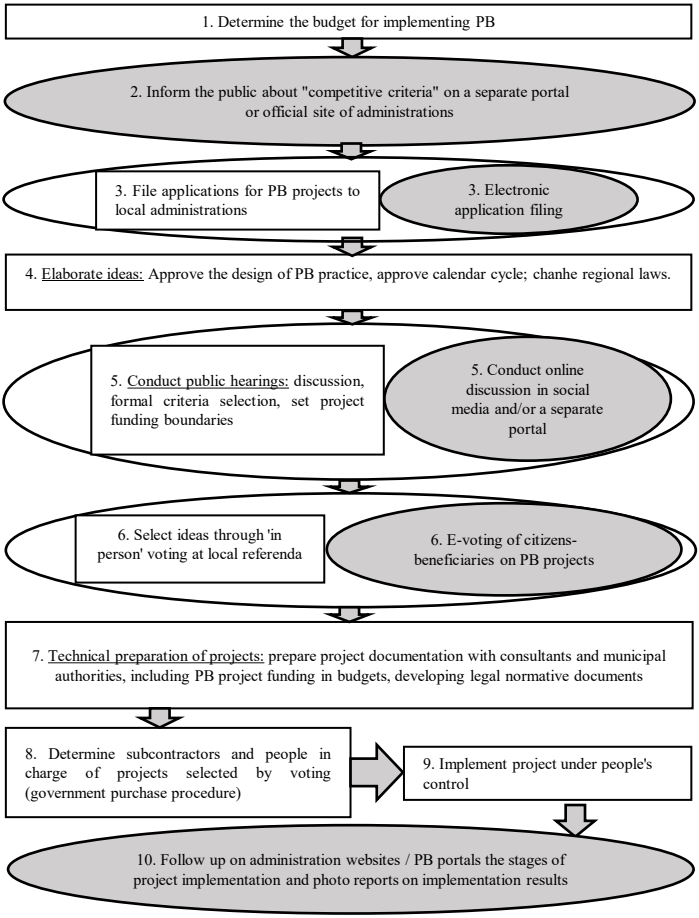
Evaluation of authorities' readiness to implementation of electronic participation of the public in participatory budgeting

To appraise how authorities are committed to implementing tools of electronic participation of the public in participatory budgeting, we shall employ the notion of 'e-government' infrastructure put forward by A.N. Shvetsov [Shvetsov, 2019. P. 14], who defined it as a complex of three-element groups: organizational and technical, information technology, and engineering support. Relative to the subject of our research, these are the following.

1. Organizational-technical elements comprise centers of public access and awareness about the operation of authorities and the provision of electronic services. Participatory budgeting includes such elements at the stage when information on the timeline and order of selection of projects for financing is disclosed. In most cases, information centers are based on websites of local administrations. Sometimes though, there are dedicated PB portals put up for these specific purposes (e.g., URL: https://ppmi.bashkortostan.ru/).

A sociological survey in 2018 aimed at establishing communication channels that citizens trust showed that most trusted are websites of government agencies – 36.1% of the surveyed, followed by e-mail –27.74%, petition portals –7.8%, social networks – 5.7%. The lowest level of trust falls on electronic voting and mobile platforms –0.6% [Pyasetskaya, 2018]. It follows that the organizational-technical function of PB project implementation is worth developing through portals of municipal and regional administrations.

2. Information technology elements – principal Internet portals that facilitate information exchange between participants of electronic interaction. In the case of 'e-government', it is the Single portal of state and municipal services, the single system of identification, authorization, and authentication of natural and legal persons as well as systems of interdepartmental electronic interaction. Relative to participatory budgeting this group of elements comprises separate information-communication channels for electronic application (initiative) submission that require budget financing, social network pages for debating PB ideas and projects, online voting portals.



Source: reconstructed by the author based on the progression of participatory budgeting projects recommended by ARFI of Finance Ministry [Vagin, Pominova, 2018].

Fig. 1. The algorithm of implementation of participatory budgeting projects using electronic public participation

An exemplary case of efficient application of this group of elements in PB is embodied in the project "Your budget"[7] (St Petersburg) that is active both on a separate portal and in social networks. At the moment of writing this paper, the site had

[7] URL: https://tvoybudget.spb.ru/

registered 21072 initiatives with 31 of them implemented[8]. In this project, applications to participate are submitted in e-form to the site where they are moderated. They are discussed in groups on VK and Facebook[9]. Regions-participants are determined by a majority of votes, members of a budget commission are selected by lot out of voters. From then on, commissions work and vote on projects in person with information support in social networks. All implementation stages of selected projects are reported with pictures on the main site. Thus, this type of project makes use of all the range of electronic tools of participation except Internet voting on projects.

Decision making based on e-voting over participatory budgeting projects is not yet established at the legislation level. As stipulated in clause 22 of the Federal law "On general principles of local self-government" decisions with public participation may only be taken at local referenda by secret ballot. The principal obstacle to the legitimization of online voting is that there is no transparency in its procedure or satisfactory technology of vote verification which undermines trust in the whole process of its application. Consequently, the results of Internet voting may only serve as an indirect indicator of the number of potential beneficiaries among voters.

One way to resolve the problems of verification and identification of PB participants would be improving the system of cross-departmental interaction. Thus, the reliable mechanism of the state service portal may be used to identify PB voters through their member account in the Single system of identification and authentication. The latter, according to the Runet, holds registrations of 70.5 million people or half of the Russian population. In 2019, 72.4 million RF citizens in total have received federal and municipal services. 46.6 mln of them used e-services and the rest visited the multifunctional centers in person[10].

An illustration may be the Sakhalin region that approved two forms of regional voting: in person or electronic with verification via SSIA. Electronic voting has a promising outlook, which is proved by the fact that out of 18399 votes in favor of projects in 2019,

[8] The official site of the program "Your budget" (: 15.03.2020). URL: https://tvoybudget.spb.ru/

[9] URL: https://vk.com/tvbspb, https://web.facebook.com/tvoybudget?_rdc=1&_rdr

[10] The official site. URL: https://runet-id.com/ (date of access: 10.12.2019).

15925 (87%) were cast online[11]. Sakhalin is also an example of intense cross-departmental communication: the PB site describes each implemented project already integrated with a departmental subsystem of state purchase whereby it is possible to follow the entire trail of purchases enacted within the project (step 8 of the algorithm, Fig. 2).

Another promising variant of solving the problem of voter identification in PB may be pegging to the single population database (it is projected to be built based on the 'Unified register for acts of civil statuses' as part of the implementation of Principal operational guidelines of RF government). Along with the Single state register of legal entities, this database is planned to form a blueprint for defining participants of legal relations – representatives of the civil society and the state[12].

3. Engineering and supplementary elements include information security systems, data communication networks, data processing centers. Their importance is bound to grow in proportion to electronic data exchange growth. This extends to personal data safety features, which are among the key factors of trust towards the e-voting procedure.

An example of digital technologies that support transparency and security of the electronic voting procedures is block chain platforms. Adapting this tool for selecting PB projects via block chain platform Polys from "Kaspersky lab" initiated in 2019 in Nizhegorodskaya and Volgogradkaya regions. Volgogradkaya region had 82.5 thousand people voting electronically, in Nizhegorodskaya – 161 thousand, while in some districts the turnout exceeded 30%[13]. Voting took place at special websites[14]. Verification of citizens was based on personal telephone numbers and a single-use texted password. The voter had access to the list of proposed PB projects in their district and could vote for any of them. Easy access and convenience of the voting process rested on its being adapted to mobile devices that were used by 80% of the total respondent group. Winning projects that collected

[11] The site of Sakhalin region on participatory budgeting. URL: https://pib.sakhminfin.ru/vote

[12] Clause 6.3. Digital technologies in public management. Principal operational guidelines of the government of Russian Federation for the period to 2024 from 29 September 2018.

[13] URL: https://polys.me/ru/success-stories/voting-in-nizhny-novgorod, https://www.volgograd.ru/news/270494/

[14] URL: https://budget4me34.ru/, http://mf.nnov.ru:8025/proekty

the most votes got funds from regional and local budgets as well as out-of-budgets sources.

Security and bright future of block chain platforms for online voting in participatory budgeting rest on the following advantages:

• there is no chance of breaking into the voting database as the votes are 'packed' into blocks that form part of block chain. To break into it, a hacker would have to get into PCs of all observers;

• anonymity of voting is safeguarded, it is not possible to see preliminary results as the block chain is encrypted;

• the block chain platform may work with any system of identification (including SSIA). Thus, it is possible to identify a group of people who have the right to vote. Criteria may be ranged according to any parameter, such as residence, which is decisive in participatory budgeting when project beneficiaries are expected to vote;

• this excludes the problem of buying votes and voting under duress: a voter may cast as many ballots as they want but the system counts only the last one;

• it is not possible to falsify results as there is no 'black box' that accumulates votes to be counted; ballot counting is decentralized following the block chain technology;

An interesting mobile application for monitoring "Inspector" is in the making. Any interested observers may be able to watch over the voting process if they have minimal technical skills[15].

The capacity of this platform for voting has been used in the political field for interparty voting, at representative scientific congresses and conferences, for the election of students' councils at universities (e.g. Russian Academy of National Economy and Public Administration, Higher School of Economics)[16], which proves the growing public trust towards this form of participation.

Assessment of public readiness for electronic participation

To assess public readiness for electronic participation in participatory budgeting one must, first of all, evaluate the technical

[15] URL: https://polys.me/ru/blog/how-blockchain-can-change-the-way-people-vote
[16] URL: https://polys.me/ru/success-stories

capacity of citizens to use tools of electronic interaction that depend on the access of the population to the Internet.

The rate of mobile Internet use by the Russian population is growing from year to year, the number of subscribers per 100 in 2011 was 47.8; in 2012–52.6; in 2013–59.8; in 2014–64.5; in 2015–68.1; in 2016–71.1; in 2017–79.9; in 2018–86.2[17]. In the central federal district by the end of 2018 access to mobile Internet reached 97%.

It is worth pointing out that the Russian population has easy access to the Internet as compared to other countries. According to the Russian Association for Electronic Communications, mobile traffic for a Russian user is 10 times cheaper than in the USA, three times cheaper than in Germany, and twice cheaper compared to South Africa. All of this as well as the fact that Russia is in fifth place by the number of downloaded applications may favor the use of this tool in public administration[18].

Besides the technical opportunity of electronic participation, another key factor in favor of the system of online participation in participatory budgeting programs pointed out by scholars is that of a habit developed in the course of citizens' participation in previous elections. An important role in developing and maintaining this habit is played by the actions of local authorities that stimulate civic activity. In particular, L. Kipenis and D. Askounis [Kipenis, Askounis, 2016] proved the importance of the factor of satisfaction of Internet users by operation of online platforms in decision making on government issues. So, the question of improving electronic participation platforms and raising the quality of e-services is extremely important. R. Gotoh [Gotoh, 2009] confirms the importance of this factor and points out that citizens' satisfaction with electronic government services needs to be permanently appraised.

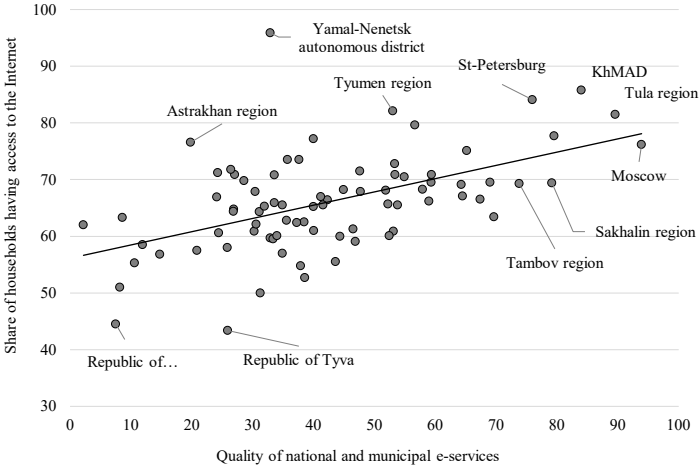
In this connection, a study of society's readiness for electronic public participation would logically consider the quality of electronic provision of government services as the most adapted tool of online interaction between the powers that be and the society at the present moment.

[17] The official site of Federal service of national statistics. [e-resource]. URL: www.gks.ru (date of access: 12.12.2019).

[18] Research project "Mobile economy of Russia 2017". Association of electronic communications (RAEC). URL: https://raec.ru/activity/analytics/9883/

According to the portal of government services, the total number of users by the end of 2019 amounted to 103 mln that represent 71% of all Russian population, and over the whole period of its operation over 152 mln services were provided[19].

Let us build a dispersion diagram (Fig. 2) to demonstrate the nature of dependence between the parameter of Internet accessibility and the quality of government services rendered. The vertical axis represents the relative share of households with Internet access in regions of Russia. The horizontal line shows the rating of the quality of government and municipal e-services for 2018 put together by the Ministry of economic development[20]. The rating relied on results of monitoring 85 regions, in the course of which a 100 percent scale was applied to such parameters as comprehensiveness and quality of e-services rendered, the quantity of such services, a mobile application used, and other.



Source: compiled by the author from data of the Ministry of economic development. URL: https://digital.alregn.ru/news/461/, and federal service of government statistics. URL: https://www.gks.ru/free_doc/doc_2018/info-ob2018.pdf

Fig. 2. Distribution of regions by parameters of quality of rendered government services and access of households to the Internet

[19] URL: https://www.gosuslugi.ru/help/news/2019_12_30_results_of_the_year
[20] URL: https://digital.alregn.ru/news/461/

Thus, in 2018 the average quality of online government services rendered in regions stands at 42% while Internet access averages 64%. The rising trend line demonstrates the improving quality of government services in regions with relatively high access to the Internet. The higher the level of public digitalization[21], the more intensive electronic interaction we see between the authority and the people. All of this, in our opinion, points to the technical readiness of the population to interact with government organs in e-form.

Sociological studies and search for efficient mechanisms of involving population in the budgeting process demonstrated that local government organs may successfully stimulate civic activism in the Internet. One strong motivator is the psychological effect of civic involvement and altruism that do require encouragement on behalf of local government [Naranjo-Zolotov et al., 2019, Du et al., 2017]. According to the research of M. Naranjo-Zolotov [2018], electronic voting is one of those mechanisms that by itself creates a psychological effect of belonging that nurtures a necessary habit and inspires further intention to participate in budgeting matters.

Despite the motivational effectiveness of social networks in the development of PB and the successful practice of e-voting on PB projects in some Russian regions the problem of legitimizing results of e-voting remains unresolved on the federal level. However, we believe that the period of the COVID-19 pandemic gave a strong boost to information-communication technologies while voting on constitutional amendments in June-July 2020 with block chain technologies raised hopes that this problem may soon be resolved on the legislative level.

Conclusions

New forms of participation and involvement of citizens in local budget planning are developing with due regard for e-Participation and mobile participation. Best practices in several countries highlighted several promising tools of participatory budgeting that help involve people in the process:

• online sites that build awareness and host discussions of proposed projects and later on review results of implemented projects;

[21] In this case, the term ‘digitalization’ used by the author refers to numbers of digital devices per population and access to the Internet.

• opportunities for virtual walks around the city via a dedicated site of participatory budgeting that allows evaluation of future results of projects ready for implementation;

• online voting by people on projects to be financed out of regional/local budgets.

Based on the data about soaring Internet penetration, a high share of citizens registered at the government services portal, and relatively low cost of mobile traffic in Russian regions, one may conclude a high level of readiness of the population to interact with organs of power via online mechanisms. To reinforce trust and form a habit, it is advisable to improve the quality of government services as an additional incentive for electronic public participation in budgeting affairs.

The domestic practices of electronic public participation we considered highlighted some promising tools of electronic voting. In the first place, it was suggested to resolve a key problem of inadequate voter verification that prevents implementing the system of electronic voting as the principal phase of decision-making in participatory budgeting. This may be done by identifying voters through their user account in the Single system of identification and authentication of the government services portal. As of today, the latter is the most advanced and effective tool of electronic interaction between the authority structures and the population. In the second place, we presented arguments for the advantages of block chain technologies – that make the procedure of online voting in participatory budgeting most transparent and secure.

Further popularization of participatory budgeting depends on the initiative of regional and local authorities. This includes improving the mechanism of electronic participation, raising the quality of rendered government services that affect citizens' satisfaction from e-platforms, and fostering the habit of electronic participation in general.

We also believe that electronic voting held in 2020 on amendments to the RF constitution using block chain technology will speed up legislation on the validity of electronic voting. This being said, we appreciate that the development of electronic technologies cannot guarantee civic participation in budgeting, it may only perform a supplementary function permitting to exercise civic rights in a more convenient and contemporary fashion.

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For citation: Derbeneva, V.V. (2020). E-Participation as a Vector of Developing Proactive Budgeting. *ECO*. No. 9. Pp. 90-113. (In Russ.). DOI: 10.30680/ECO0131-7652-2020-9-90-113.