A decade of eParticipation research

An overview of the ePart conference 2009 - 2018

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Abstract. The first ePart conference was organized in Linz in 2009, co-located with the longer-running eGov conference, which at the time was in its 7th year. Since then, we have seen ten conferences focusing on eParticipation research. In this paper, we summarize these ten years by examining authors, keywords and prominent themes of the conferences. Our starting point is two early papers on eParticipation, which aimed to provide an overview and agenda for the field. We show how the eParticipation community addressed this agenda, and how the agenda has changed over a decade of eParticipation research.

Keywords: ePart, eParticipation research, review, overview

1 Introduction

In 2009, the ePart conference was organized in Linz, Austria for the first time. ePart was derived from and co-located with the eGov conference, which in 2009 was already in its 8th year. The first year, DEXA was the organizer, but from 2010 the conference moved to the International Federation for Information Processing (IFIP), under technical committee 8 – Information Systems, as part of working group 8.5: Information Systems in Public Administration[1]. The conference arguably emerged from the EU FP6 Demo-Net[2] project, as many of the Demo-Net participants were active in establishing ePart. Demo-Net aimed at integrating what was then a fragmented group of individuals working on eParticipation-related themes. A total of 23 papers mention Demo-Net in text or references, 17 of these published in the first three years of the conference.

The preface to the first "electronic participation" proceedings states the purpose of the conference as "reviewing research advances in both social and technological scientific domains, seeking to demonstrate new concepts, methods and styles of eParticipation. … It aims to bring together researchers from a wide range of academic

[1] http://ifiptc8.dsi.uminho.pt/index.php/wgroups#wg81-5
[2] https://cordis.europa.eu/project/rcn/79315/factsheet/en

disciplines." [1]. The focus on eParticipation as a multidisciplinary field is emphasized throughout the history of the conference.

In 2015, ePart was no longer a stand-alone conference, as it merged back together with the eGov conference as a separate track. However, ePart still had separate proceedings. In addition to the general eGovernment and eParticipation tracks, 2015 introduced new tracks for deliberation, policy modelling and policy informatics as well as a track for evaluation of eParticipation initiatives, reflecting current changes in the focus of eParticipation research [2].

In 2018, the eGov/ePart conference again merged, this time with Danube University Krems' CeDeM conference. From 2018, name of the conference is "eGov/CeDeM/ ePart", still with separate proceedings for eParticipation. The 2018 conference had the following tracks: General, social media, policy modelling/informatics and social innovation. The purpose of the conference remains the same, but topically we can argue that it has seen an increasing focus on technology in recent years:

> "*e-government and open government, e-democracy and e-participation, smart governance, artificial intelligence, data analytics and automated decision-making, digital collaboration and social media, policy modelling and policy informatics, social innovation, and open data, linked data and the semantic web*" [3].

So far, we have seen ten editions of ePart (2009-2018), with 150 full papers presented by 262 different authors. The conference locations have been scattered around Europe, with Austria as the only country to organize the conference twice. Since the beginning, accepted full papers have been published in the Springer *Lecture Notes in Computer Science* book series, under the title "Electronic participation".

This paper aims to analyse how the ePart conference has evolved over the past decade. We do so in order to provide a status and overview of a decade of research, but also to point forward to future eParticipation research themes. In a time of fake news, polarization and attacks on democracy in several countries, eParticipation research is more important than ever, as long as we stay relevant and address current issues and topics in society.

The paper is structured as follows: Section 2 summarizes the themes that early eParticipation research from the conference as well as related journals papers identified as important for the field. Section 3 describes the methodology of the paper. In section 4, we present our findings related to tracks, keywords and themes, authors and impact. Finally, we present our conclusions about how the conference has evolved and point to some future research directions for eParticipation.

2 Defining the eParticipation research agenda

From 2008 and onwards several papers were published aiming to identify the emerging field of eParticipation. In this section, we briefly go through the main findings from these, in order to identify the research directions laid out in the early days. This provides us with a frame for the findings presented in section 4.

In the paper "the shape of eParticipation", Sæbø, Rose and Flak [4] perform a literature review of eParticipation, mapping the fields' actors, activities and outcomes.

They define eParticipation activities as eVoting, online discourse, online decision making, eActivism, eConsultation, eCampaigning and ePetioning. Their review shows that the field is a mix of various fields and disciplines, notably political science, public administration, Information Systems and sociology. In terms of theory use, eParticipation had not developed a set of common theories at the time, and many papers were mainly empirical with little attention to theory. Methods-wise, surveys, case studies and various forms of content analysis were commonly applied. They pointed to six avenues of research for future eParticipation research: *Normative* - The why - objectives and goals/purpose of eParticipation – from a research and practice perspective. *Instrumental* - The how – frameworks, methods and standards to research, create and implement eParticipation.
Descriptive - describing and summarizing initiatives – ongoing case studies, country studies etc. *Evaluation methods* – Find a common set of methods to evaluate initiatives *Technology* – specific technologies were mostly black boxed in 2008, *Theory/methods* – Agree on specific theories and methods

The following year, Macintosh, Coleman and Schneeberger [5] published a paper at the first ePart conference, where they identified the research gaps that eParticipation should address in the coming years. They also found six areas where research should be focused, some overlapping and some different from that of Sæbø, Rose and Flak:
Breadth of research field – eParticipation research was made up from many disciplines, but there were few multidisciplinary studies. IS people study IS questions, and public policy scholars focused on public policy. *Research design* – Immature and little agreement on relevant methods. Few studies of citizen-initiated participation and the lack of true multidisciplinary approaches led to fragmented research lacking a holistic approach. *Technology design* – a socio-technical approach to design of eParticipation tools and processes, and research on how to analyse vast amounts of non-structured dialogue-data from a wide range of sources. *Institutional resistance* – Resistance from politicians and government, as eParticipation can be seen to change or at least affect the balance of power. Lack of support from policy makers was identified as a major barrier to eParticipation. *Equity* –the digital, civic and social divides, which cause some people to participate and others to refrain from doing so. *Theory* – A general discussion of benefits and risks of eParticipation in the context of established democratic theories, and theory development to analyse key concepts such as deliberation, power structures and the many facets of the political game.

If we merge these two early attempts at defining the eParticipation research agenda, we can sum them up as follows:

Why and how to conduct eParticipation research? What should be the objectives of eParticipation from a research and practitioner perspective? Which frameworks, methods and standards can be applied to reach these goals?

Theory and methods, especially theoretical development and methods allowing for a true multidisciplinary approach, is mentioned as important by both papers.

Technology and context. While Sæbø, Rose and Flak argue that technology has been black boxed, Macintosh, Coleman and Schneeberger argue for a sociotechnical approach. The balance between technology and context emerges as the sweet spot to aim for.

Evaluation of issues such as resistance, various divides and the effect of eParticipation initiatives.

Descriptive studies, case studies and country comparisons in order to keep track of initiatives that are being implemented.

In 2012, Government Information Quarterly published two studies building on these earlier papers, and examining how the field had progressed since 2009/2009. Susha and Grönlund [6] conclude that there had been some progress, as the field had some "in-house" theory development. However, there was still theoretical immaturity in how eParticipation applies democracy theory, and on combinations of the research themes (stakeholders, environment and applications/tools).

Medaglia's literature review [7] also showed some progress, and pointed to future challenges: Contextual factors were limited to underlying technological issues, while policy, legal issues and the wider social context was largely ignored. He also called for method plurality, as most studies were surveys, case studies or content analyses, and as the field is about participation, especially called for more studies involving eParticpation actors directly. As with Susha and Grönlund, Medaglia also calls for more research on actors other than government (e.g. citizens and other stakeholders).

Summing up, these two "mid-term" reviews showed some progress, but also called for more studies of context compared to technology, as well as continued methodological and theoretical development. In the findings and discussion, we will examine how these issues have evolved towards 2018 within the confinement of the ePart conference.

3 Research approach

We collected data for this paper from the Digital government Research library[3] (DGRL) V14.5, the ten volumes of proceedings from the Springer Lecture Notes in Computer Science series' "Electronic participation" and their affiliated Bookmetrix statistics, as well as Google scholar for citation analysis. This provided us with a total of 150 publications published over the ten previous editions of the ePart conference. In addition to the Springer proceedings, the conference has also published work in progress papers on Trauner and later IOS Press, and CeDeM, which merged with eGov/ePart in 2018, has a long series of proceedings. As we in this paper are interested only in completed research in the ePart conference, Trauner/IOS and CeDeM pre-2018 has been excluded from the analysis. Later work summing up eParticipation more broadly should consider including these sources as well.

The data was manually coded into an MYSQL database. In this process, we were able to flush out some minor errors in the data set, such as errors in author names. We created individual tables for "paper title", "author", "and keyword", and used these to create joins between authors, papers and keywords. We left abstracts in the Endnote database, and browsed for identification of research methods and theories.

[3] http://faculty.washington.edu/jscholl/dgrl/

For the sections on keywords, methods and theories, we also used Nvivo12 and its word search functionality to search the paper abstracts for theory and methods. Nvivo generates both word clouds and word trees, which are useful in creating an overview of the situation. While this did not provide a comprehensive list, it did provide some insights about theory and method use which can form the basis for future studies.

Finally, we performed a citation analysis using the "publish or perish" tool[4] to query Google scholar for citation data on the 150 papers. We chose to use Google scholar rather than web of science, as Google scholar have proven to be an accurate and relevant source for social science citation analysis [8]. There is not room to include all the data in this article, but interested readers can download the data from our University's open data archive[5]

This combination of data allows us to examine if there is a core of eParticipation researchers, the themes and topics addressed over time, the theories and methods being used as well as the impact of the conference over the past decade. The paper structure is inspired by Scholl's review of the eGov conference [9] and Carvalho, Meyerhoff Nielsen and Rohman's review of Icegov, another conference aimed at eGovernment and eParticipation research [10].

4 Findings

4.1 Tracks and keywords – what is the conference concerned with?

Each year the proceedings have been divided into 3-4 different tracks (or sections in the first years before there were official tracks in the call for papers). When grouping tracks with similar content, we end up with 11 different topics (Table 1), which have changed over time. Tools, platforms and techniques, as well as case and country studies were prominent in the first editions of the conference. These have disappeared as tracks, but are still common in papers submitted for other tracks, and can be seen as a response to the call for studies of this type.

Tracks related to the field more broadly, such as foundations, research gaps, outlook, reviews and reflection, have featured throughout the conference. Focus has moved from establishing the field towards reflecting on our status. Social media and various forms of citizen engagement (consultation, deliberation) were popular in the middle years, with social media making a comeback in 2018. In 2015 a new topic, policy modelling, appeared – perhaps as a response to the growing importance of data analytics, open data and big data. eVoting in 2010, methodological issues in 2017 and social innovation in 2018 have been once-only tracks. However, social innovation returns as a track for 2019, so this could be a new direction for eParticipation, broadening the field to cover society rather than the narrower citizen-politician relation. eVoting also has a conference of its own, which might explain why we have only seen this track once.

[4] https://harzing.com/resources/publish-or-perish

[5] https://usn.figshare.com/

Overall, the tracks seem to cover a lot of the themes and issues called for by the early eParticipation publications.

Table 1: Overview of conference tracks

	Tools	Case	Evaluation	Field	Voting	Argument	Social media	Engagement	Policy mod.	Method	Innovation
2009	■	■	■	■							
2010		■	■	■	■						
2011		■		■		■	■				
2012	■	■	■					■			
2013				■			■	■			
2014			■				■	■			
2015			■				■	■	■		
2016				■					■		
2017				■					■	■	
2018							■		■		■

Using Nvivo 12, we created a word cloud that included specialisations of words (grouping similar words, such as "talk" and "whisper"), and the most common words identified were *events*, *artefacts*, *participation*, *countries*, *content*, *status*, *active*, *citizens*, *political*, *process* and *system*. This shows broadly what the papers at the conference have been covering, and reveals a broad range of issues, but may also indicate a somewhat narrow focus on events (cases, places etc) and artefacts (which includes tools, frameworks, methods and services). Examining the title and content of papers strengthen the impression that artefacts and events have been the centre of a lot of research.

The authors published in the Springer proceedings have used 390 different keywords, but many appear only once or a few times, and there is little standardisation as many can be seen as synonymous. In addition, a lot of themes and issues seem to appear once or twice, and then disappear, which indicates that authors are testing a variety of approaches, tools and themes.

We created a list of frequently used keywords by only including those that were used more than four times each year. This narrowed the list down from 390 to 16, which includes eParticipation, eGovernment, Internet and ICTs. Excluding these, we get the list in Table 2. Most of the keywords appeared in the first years of the conference, and have been used on and off throughout. The exception is argument visualization, which seems to have fallen out of popular use after 2012, and policy-making, which has not been a popular keyword after 2013. Mostly, this list reflects what has been defined as core activities in eParticipation: engagement with citizens (deliberation, consultation, participation), activities (argument visualization, petitions), the "why and how" question (democracy, policymaking and public policy), methods (case study, genre

theory) and evaluation of eParticipation initiatives and tools. Social media as the most frequently appearing keyword could indicate the importance of social media for democracy and participation over the past decade.

Table 2: Keywords used five times or more

	Argument viz.	Case study	Participation	(e)deliberation	(e)consultation	(e)petiotns	evaluation	Genre theory	(e)democracy	Policymaking	Public policy	Social media
2009	■			■	■				■		■	
2010		■	■	■	■		■	■	■		■	■
2011	■	■		■	■	■			■	■		■
2012	■		■			■		■		■	■	■
2013		■		■					■	■		■
2014				■			■	■				■
2015			■		■						■	■
2016		■	■	■		■			■		■	■
2017			■	■			■					■
2018			■				■	■				■

4.2 Method and theory use

The papers cited in section two all point to the importance of methodological and theoretical development. While we did not have the resources to do a full manual evaluation of this, we were able to extract some information using Nvivo's text search tool and word tree feature. We assumed that papers with a strong emphasis on method or theory would use these in title, keywords and/or abstract content, so we searched these items for words commonly used to describe theory and method. Papers mention several theories and methods, but overall, our impression is that theoretical and methodological development is not a major concern of most papers presented at ePart.

"(Literature) review" is a common phrase, and the word three shows it is used for examining social media, frameworks, methods, urban planning, campaigning, opinion mining, the public sphere, policy and heritage. Mostly in one or two papers, but the public sphere is found in 8 different papers, supporting earlier research saying that the public sphere is frequently used for theoretical grounding of eParticipation.

"Theory" provides only 15 hits. The word tree shows the following theories applied: Diffusion of innovation, technology acceptance, genre theory, democratic theory, institutional theory, social network theory, online deliberation theory, policy networks theory and framing theory. While this shows theoretical width, the limited number of hits shows that many theories are used once or a few times, with few papers building on earlier research presented at the conference (ref. next sections on authors and citations)

"Method" reveals references to mixed methods, both on/offline and quantitive/qualitative. Other methods include surveys, technology acceptance, opinion mining, content analysis, policy analysis and case study. Many of the hits refer to development of methods for participation rather than research methods.

4.3 Authors and countries – is there an ePart core?

262 different authors, 81 female and 181 male, have been published in the Springer proceedings of ePart. Of these, 202 only had one accepted paper during the ten years. 38 authors had two accepted papers, while 22 authors had three or more accepted papers (Table 3). Based on this, only about 23% of the participants in the conference are returning authors, with even fewer authors being regular participants. If we include those who swap between eGov and ePart proceedings, as well as those in the work in progress series, the number of returning authors increases somewhat, but the ePart core remains relatively small.

Table 3: ePart community as defined by number of publications. Based on Scholl, 2009

Publications per author	**Number of publications**	**Cumulative count**	**percentage**	**Cumulative percentage**
10 or more	4	4	1,53	1,53
5 to 6	5	9	1,91	3,44
3 to 4	13	22	4,96	8,4
2	38	60	14,5	22,9
1	202	262	77,1	100

If we focus on the authors with three or more contributions, we find several teams co-authoring papers. The University of the Aegean has ten papers, Koblenz six, Macedonia five, Örebro three and Agder one. An outlier here is a team of Japanese scholars, who have co-authored four papers (Table 4).

Table 4: Teams of co-authors

University of Aegan -10 papers Euripidis Loukis Yannis Charalabidis Aggeliki Androutsopoulou	**University of Koblenz – 6 papers** Maria Wimmer Sabrina Scherer
University of Macedonia – 5 papers Efthimios Tambouris (6) Eleni Panopoulou (5) Konstantinos Tarabanis (7)	**Nagoya inst. of Technology – 4 papers** Tadachika Ozono (4) Shun Shiramatsu (4) Toramatsu Shintani (4)
Örebro University – 3 papers Joachim Åstrøm Martin Karlsson	**University of Agder – 1 paper** Øystein Sæbø Marius Johannessen

These teams, however, seem to work mostly in isolation. We examined the citations to earlier ePart proceedings, and found that most teams cite their own previous work, but

citations building on other people's ePart publications are less common, except for the citations of the top three cited papers (see next section). Figure 1 shows two examples of co-author networks, visualising how these mostly consist of members from a single university.

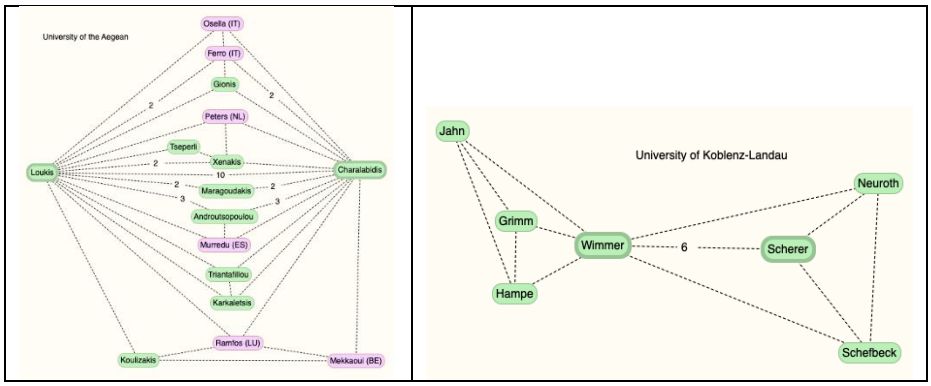


Figure 1: Examples of co-citation networks

If we look at the countries and institutions represented at ePart, we see that a majority is from Europe (including Russia). Eastern European are a notable absence, with only Hungary and Slovenia being present once each. Even though the conference is always held in Europe, there have also been several authors from the US (21), Brazil (8) New Zealand (3) and Australia (3).

129 different institutions have been represented at the conference, with 13 institutions having been represented by more than five different authors: University of Macedonia (9), ITMO St. Petersburg (7), Örebro University (7), Nagoya Institute of Technology (6), University of Koblenz-Landau (6), National University of Ireland (6), University of Twente (5), NTU Athens (5), Brunel University (5), University of the Aegean (5), University of Agder (5), Danube University Krems (5) and the University of Geneva (5).

4.4 Impact

Table 5 presents and overview of the conference locations, number of published full papers, downloads (from Springer), citations and tracks for each year. The numbers are from Springers Bookmetrix service. Citation numbers are higher in reality if you examine each paper in for example Google Scholar, but the number is included for the purpose of comparison. Numbers were collected 27th February 2019. It seems as if there was a dip in interest between 2013 and 2014, with the number of downloads being cut almost in half. However, 2015-17 saw a rise again, although not to the same levels as in the early years of the conference. The number of papers also went down from 2011 to 2012. While the cause is not known, it can be speculated that this at least partially is a consequence of less funding for democracy research from EU FP7 to H2020. Informal

talks with experienced researchers in eParticipation and other fields studying democracy supports this speculation.

Table 5: Overview of ePart conferences

Year	City	# of papers	Paper downloads	Citations, Bookmetrix
2009	Linz	16	14.000	138
2010	Lausanne	19	17.000	92
2011	Delft	26	97.000	127
2012	Kristiansand	14	12.000	33
2013	Koblenz	13	11.000	23
2014	Dublin	11	5.900	15
2015	Thessaloniki	12	7.400	25
2016	Guimarães	14	7.500	29
2017	St. Petersburg	13	7.100	3
2018	Krems a.d. Donau	13	2.300	

Table 6 shows the aggregated statistics of the Google scholar citation analysis created with the *Publish or Perish* Citation analysis tool. The 150 papers in the Springer proceedings have received 1972 citations, with a H-index of 20 (20 papers have been cited at least 20 times, and Hc-index of 15. The Hc-index adds age-related weighting to each paper, giving less weight to older papers.

Table 6: Aggregated Google scholar statistcs

Papers	Citations	Cites/year	Cites/paper	Authors/paper	H-index	Hc-index
150	1972	197,2	13,15	2,58	20	15

25 papers have yet to receive any citations in Google scholar. Of these, only six are published before 2017, so it is likely that more of the recently published papers will receive citations as time goes by. In other words, most papers published at the ePart conference receive citations. 53 papers have 10 or more citations, 38 have more than 15, and if we examine citations per year, we see that 10 papers have more than five citations per year

It is difficult to compare these numbers with other conferences publishing eParticipation research, as neither ICEGOV, EGOVIS, DG.O or the HICSS egov-track seems to be indexed by Google scholar. Using the Publish or Perish tool to search for these conferences only provides hits on papers that are self-archived in Researchgate and other indexed self-archiving repositories. This could be taken as an argument that even with self-archiving as an option, the decision to publish proceedings with an established publisher such as Springer contributes to the impact of the conference when measured in number of citations.

Table 7 shows the top 10 cited papers of the ePart conference, all of which published beteween 2009 and 2012. Topic-wise, six of the papers are related to «web 2.0» and new technologies - social media, opinion mining and crowdsourcing, while three

examine the state of the field in terms of research gaps and models, and summing up the European eParticipation agenda. The final paper in the list examines e-voting.

Table 7: Top ten cited papers

Citations	Authors	Title	Year	Cites/ Year
230	Van Effing, Hillegersberg, Huibers	Social media and political participation: are Facebook, Twitter and YouTube democratizing our political systems?	2011	28.75
164	Macintosh, Coleman, Schneeberger	eParticipation: The research gaps	2009	16.40
85	Grönlund	ICT is not participation is not democracy– eParticipation development models revisited	2009	8,50
81	Sæbø,Rose, Nyvang	The role of social networking services in eParticipation	2009	8,10
81	Ladner, Pianzola	Do voting advice applications have an effect on electoral participation and voter turnout? Evidence from the 2007 Swiss Federal Elections	2010	9.00
70	Sæbø	Understanding TwitterTM Use among Parliament Representatives: A Genre Analysis	2011	8,75
58	Andersen, Medaglia	The use of Facebook in national election campaigns: politics as usual?	2009	5,80
53	Panopoulou, Tambouris, Tarabanis	eParticipation initiatives in Europe: learning from practitioners	2010	5,89
41	Maragoudakis, Loukis, Charalabidis	A review of opinion mining methods for analyzing citizens' contributions in public policy debate	2011	5,13
39	Charalabidis, Triantafillou, Karkaletsis	Public policy formulation through non moderated crowdsourcing in social media	2012	5,57

5 Conclusion and future work

Summing up this review of the past ten years of ePart, we can draw some tentative conclusions and suggestions for the future. Impact-wise, the conference seems to do quite well in terms of reach (downloads and citations), indicating that the Springer proceedings is a worthwile investment. However, the core of participants is fairly small, so we should try to attract more researchers to become part of the community.

Many of the calls made by early research have been met, at least to some extent. There is research on the themes and topics being called for, the how and why of eParticipation, technology and tools, evaluation of initiatives and an ever growing list of case studies covering different countries. However, theory and methodological development is not as strong, and there is still little connection between the themes stakeholders/environment/tools. The papers at the conference are stronger when it comes to practical issues; systems, tools, frameworks and methods for participation. Moving forward, we should perhaps call for more collaboration between participants, so we can improve theoretical development and loosen what seems to be institutional silos working together independently from each other. Further, as the same keywords

appear over time, it might be time for some discussions on future themes. Policy informatics has emerged as a new area, but there is so far little evidence for example of research into the current political climate of right-wing populism, polarization and other contemporary issues.

Finally, we have some suggestions for future work based on this research: IOS/Trauner, CeDeM and Springer proceedings should be included in an extended study of the wider eParticipation community, perhaps also including other conferences. We only briefly examined the theory and method use, and future studies should do a comprehensive review of this area. Finally, we call for future studies of the entire field, to build on the comprehensive reviews of 2008, 2011 and 2012.

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