

A Structured Analysis of Research on Citizen Participation in E-Government Service Platforms

Jaspreet Kaur¹ and Dr. Mahender Singh²

Research Scholar, Department of Public Administration¹

Research Guide, Department of Public Administration²

NIILM University, Kaithal, Haryana, India

Abstract: *As more publications focus on e-government, the area is evolving. Among this study, public engagement in e-government has garnered attention. This engagement is sometimes associated with "e-democracy" citizens' democratic participation in policymaking. This paper reassesses e-participation by examining citizen involvement in e-government services, a largely uncharted area. Joint service design and execution may demonstrate this partnership. We conduct a Systematic Literature Review and template analysis of selected academic papers to evaluate the field's current understanding. This study suggests further research on engaged stakeholders, organizational and motivational requirements, participation strategies, and participation results*

Keywords: Service delivery, e-participation, citizens, and e-government

I. INTRODUCTION

E-government is when governments use ICT to improve services and information for the public, business partners, employees, and other government agencies. Citizens' participation in e-government has long interested scholars, agencies, and supranational organizations. This involves analyzing their e-government engagement, how ICT affects their government confidence, and their desire to use e-government services. Since people's high expectations drive model progress, Layne and Lee (2001) suggested a maturity model for e-government that put citizens at the center. The paper does not focus on participation; however Layne and Lee (2001) propose using ICT to involve individuals more in democratic processes. In contrast, other seminal articles advocate for web-based participatory governance, greater accountability and transparency in government, and improved communication (Andersen and Henriksen, 2006; West, 2004), as well as e-democracy. The "Open Government" movement promotes government openness, interaction, and collaboration (Lee and Kwak, 2012). Scientific literature refers to people's proactive activity as "e-participation," while "e-democracy" refers to their democratic participation in policy creation or decision-making via ICT (Saebo et al., 2008).

This research examines public engagement in e-government service delivery, a largely untapped element of electronic participation. This phrase includes any chance for people to improve e-government service development and execution. This article discusses executive and administrative government agencies, not legislative or political. Systematic Literature Reviews (SLRs) are undertaken according to Kitchenham and Charters' (2007) guidelines to evaluate current knowledge. An SLR aims to synthesize all available data on a topic. This is particularly important since the glut of language prevents researchers from systematically assessing the current information. Following are the paper's parts. The "Background" section explains this paper's purpose and the need for an SLR. SLR steps are explained in the "Methodology" section. We analyze the selected publications quantitatively and qualitatively using template analysis in the "Analysis" section. The "Discussion and Research Directions" section suggests further study. These paths address this field's primary themes: stakeholders, organizational and motivational requirements, participation techniques, and outcomes. The "Conclusion" summarizes the paper's limits and conclusions.

Background

Prior to undertaking the SLR, a more comprehensive understanding of the multifaceted notion of e-government and the citizen's function within this paradigm was imperative. A foundational examination of the scholarly literature facilitates a more comprehensive comprehension of the correlation that exists between e-government and citizens. This context assists in identifying research gaps and assessing the necessity of conducting an SLR.

Role of the citizens within e-government

Lawson-Body et al. (2014) summarized e-government research as two streams. E-participation, e-government, and the electronic democratic process are linked by electronic democracy theorists. Economic theorists focus on electronic service delivery efficiency. Other major e-government publications examine this clash between these two currents. Ho (2002) criticizes public governance's outward focus on consumers. Instead, the author suggests empowering people with information technology to become "owners" of services. Welch et al. (2005) found that governments often treat individuals as passive consumers rather as active participants in public affairs, despite their high expectations. Yildiz (2007) suggests in his e-government literature review that involvement methods be prioritized above results. He also suggests linking the study to public administration courses to examine people's roles in e-governance. In their empirical review, Tolbert and Mossberger (2006) identify two government-to-citizen paradigms: participatory and entrepreneurial. Chadwick and May (2003) established three state-citizen interaction models. Service improvement is the management model's first goal. The consultative paradigm improves government-public opinion communication. Thirdly, decision-making involvement promotes citizen-government engagement. They argue that the managerial approach may minimize the Internet's democratic potential.

Research Gaps

Some writers see people as clients, while others view them as active participants in e-government. To understand that participation encompasses e-government service delivery as well as democracy, this explanation is necessary. This study applies Linders' (2011) formalization of service delivery to e-government services. Table 1 summarizes these processes to demonstrate service delivery and community involvement on the two delivery phases. We combined the design and monitoring phases to include e-government service assessment in the development lifecycle. The categories are linked to Wijnhoven et al.'s (2015) Citizen Sourcing and Citizen Ideation for Service Co-Execution and Design.

Table 1. E-government Service Delivery

	For traditional e-government service	With the participation of citizens	Example of participation in e-government service
Service Design	Ideation and development of the e-government service	Co-design : From generation of new ideas and analysis of citizens' requirements to evaluation of the service	Focus groups with citizens to gather requirements, survey to evaluate the service
Service Execution	Day-to-day transactions of an existing service	Co-execution : Citizens assist government in their core tasks	Crowdsourcing platform for citizens to co-deliver e-government services

Service Design and Execution deconstructs service delivery involvement. Service Co-Design includes all citizen-performed e-government service design improvements. However, Service Co-Execution includes all citizen-performed acts to help governments fulfill their regular duties. Citizens as participants in e-government service delivery may be seen from several viewpoints. Gil-García and Pardo (2005) present the IT perspective on end-user engagement in IT project design, development, and assessment. Citizens as participants in government service delivery is linked to public administration research's co-creation and coproduction notions. The "Open Government" movement's cooperation and participation principles inform this viewpoint on current politics. Research is lacking on implementing these ideas in e-government. Another issue is the lack of democratic and service delivery participation linkages needed to create a

unified e-participation domain. Finally, public participation in service delivery may improve efficiency and encourage democratic engagement.

Influential (systematic) e-government literature evaluations have been studied to support an SLR to fill these research gaps. The CRD criteria (Centre for Reviews and Dissemination, 2009) were used to evaluate these articles: description of foundational research, inclusion criteria, database searches, and quality and validity assessment. Five relevant literature reviews supported the preliminary inquiry. Saebø et al. (2008) describe e-participation as public engagement in planning and implementing e-government services, however their discussion is confined to democratic citizen participation. Medaglia (2012) clarifies in the limits section that his focus is on ICT difficulties for democratic decision-making, not all participatory procedures. Susha and Gronlund (2012) contribute to e-participation systematization. They want to widen the study area by distinguishing political e-participation, which is closely linked to e-democracy, from other forms of involvement. Alzahrani et al. (2016) focus on people' faith in e-government by examining their uptake of e-government services. The authors conclude that governments should empower individuals and aggressively promote e-government. Linders (2011) describes how new ICT capabilities have revived citizen-coproduction.

This review shows that e-participation and e-democracy studies are often confused, even though they have different theoretical foundations. This article suggests reconsidering e-government service delivery and other under-researched e-participation.

II. METHODOLOGY

We provide the study procedure to begin the review process per Kitchenham and Charters (2007). This section describes our SLR organization, behavior, and reporting mechanism.

Planning the review

Research Questions: The purpose of this SLR is to determine the requirements, methods, and outcomes of citizen participation in e-government service delivery. According to the agenda-setting article by Axelsson et al. (2010), we ask research questions on participation requirements, processes, and outcomes: What incentives and barriers do people see for providing e-government services? Which methods are best for public participation in e-government services? Which components of e-government services are modified by citizen engagement?

Search terms: To design research queries according to Kitchenham and Charters (2007), use PICOC criteria to produce search phrases. Due of their software engineering focus, the PICOC Criteria fail to produce e-government keywords well. After conducting trials in relevant digital archives, we found that "AND" would effectively unite "participation" and "e-government" into two categories. For the final search keywords, we focused on PICOC's "Population" and "Intervention" criteria to narrow the article selection. were search phrases for the three digital libraries. The words "Participation," "Involvement," "Engagement," "Inclusion," "Collaborative," "Co-Creation," "Co-Production," "Participatory," "Cooperative," "Co-Design," "Centric," "Centered," "Requirements," "Sourcing," "Crowdsourcing," "Agile," "Smart," "Open Data," & "Social Media" all work.

Search for primary studies: We searched library titles for relevant scientific publications using keywords. The Web of Science library was searched first. The title query yielded 197 results. After then, Scopus found 386 articles. Merging these libraries gives a complete view of conference proceedings and journal papers on e-government tracks like ICIS, AMCIS, HICCS, and ECIS. We finished the search by analyzing the chosen papers using forward/backward citation analysis and reviewing Google Scholar. This search yielded 253 more articles.

Study selection criteria: Each of the selected English articles discusses public engagement in e-government services. We generally excluded papers without participatory approach documentation. To emphasize involvement, we eliminated articles on citizens' faith in e-services or their desire to use them from their participatory research (e.g., polls with people). To focus on conference and journal articles, grey literature was removed.

Study quality assessment checklists and procedures: Based on the abstract, publications were included or excluded. In case of uncertainty, the complete article was evaluated.

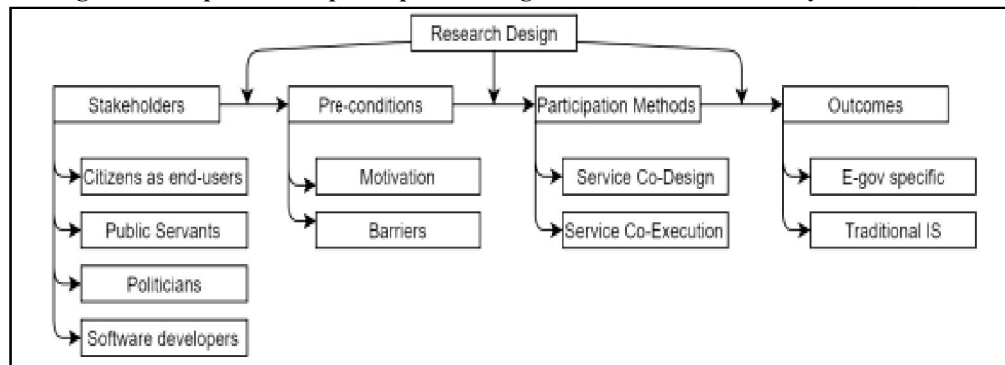
Conducting the review

The preliminary assessment yielded 50 items. Two steps are used to analyze the large number of publications. The papers were divided into 19 core articles and 31 additional pieces on public participation in e-government services. These publications cover study areas that need independent investigation. To preserve a high-level perspective, this SLR focuses on this first collection. These study fields will be examined to see how they may assist e-government. Composition of these 31 articles: Three articles introduce the crowdsourcing paradigm for e-service delivery; four describe disabled citizens' involvement in service design; three describe how Geographical Information Systems (GIS) facilitate citizen participation; seven describe how citizens use Open Data; seven focus on Web 2.0; and seven describe customized ad hoc methods.

Data reporting

We structure our review of the 19 key papers using King et al. (2004) template analysis. This approach lets us assess textual topics' predominance. This template analysis aids research field visualisation. Table 2 summarizes the papers and their main subjects. The article discusses study design, stakeholders, preconditions, involvement techniques, and results. To keep it brief, the "insights" section lists the article's topics. However, the "Analysis" section presents the table analysis's specific results more thoroughly.

Figure 1. Template of the participation in e-government service delivery research field



Research design

The selected publications use case study research the most (6), followed by action research (3), literature review (3), interviews (4), and surveys (3). One may study stakeholder involvement preconditions and obstacles, participation strategies, and outcomes using these research approaches.

Stakeholders

Although articles about citizens' involvement in e-government services were chosen based on the selection criteria, the literature occasionally acknowledges the significant contributions of other stakeholders, such as political representatives, software developers, and public servants. The word "stakeholders" will refer to this large group. Lindgren's (2014) essay suggests shifting attention from system users to system beneficiaries. Oostveen and Van Den Besselaar (2004) use the stakeholders approach to classify e-government users as end-user citizens, citizens with political agendas, public servants, technical management, administrative management, and politicians. Interestingly, eight pieces focus on "citizens," seven on "users," and three on "stakeholders." These eighteen articles investigate "citizens as end-users" in detail. Participation is exclusively mentioned by "software developers" and "public servants", not "political representatives."

Pre-Conditions

Two of the nineteen papers address motivation. Wijnhoven et al. (2015) include eight motivating factors: prosocial conduct, leisure, profession, change, goals, leaning, reciprocity, reputation, pleasure, ideology, and money. The project's nature affects residents' participation, the authors find. Thus, co-design and co-execution incentives vary. Holgersson and Karlsson (2014) found that prior exposure to system development, satisfaction with public e-services, personal motivations, time availability, and social commitment influence public affairs participation. In addition,

industrial democracy empowers individuals and public officials in e-government efforts. Several publications also address citizen engagement barriers. However, participation mode affects hurdles. Some studies highlight traditional barriers to information system (IS) involvement, such as public and public officials' low ICT competency. Despite their opinion of the project as difficult, some writers suggest that people must be convinced that their engagement may improve service delivery. E-government also has unique challenges, such as a diversified and large user base that may distrust the government. Excluding marginalised groups is especially dangerous. Without competition for e-government services, software companies and public officials are not driven to promote user-friendliness or inclusivity. Ignorance of public domain processes and laws hinders citizens' participation.

Participation Methods

We adapt Linders (2011)' typology to classify involvement approaches as service co-design and co-execution. Scandinavian researchers are studying service co-design in e-government service design. This research uses three user involvement approaches (Axelsson et al., 2010; Holgersson and Karlsson, 2012, 2014; Karlsson, 2012; Lindgren, 2014). This promising study determines the path and distinguishes user innovation, user-centered design, and participatory design. Some academics use these methods independently (van Velsen et al., 2009; Olphert and Damodaran, 2007). All three schools of involvement are experimentally tested and applied via prototyping, in-depth interviews, focus groups, or internet surveys (Fllstad et al., 2004; Oostveen and Van Den Besselaar, 2004). Chan and Pan (2008) suggest identifying user intermediates and involving citizens throughout development to address citizen selection. Billestrup and Stage (2014) interview public officials as public representatives in their Agile approach. Only two publications (De Róiste, 2013; Sørnum, 2011) have been published on citizen assessments of e-government services, including websites, in connection to improving their design. This assessment also uses online surveys, phone or in-person surveys, focus groups, interviews, eye-tracking, and representative users. Some researchers have described e-government services that allow service co-execution (Anthopoulos et al., 2007; e-government groupware). The second collection of papers covers most of the insights into these e-government services, thus their study has been pushed until the second part of the research. They talk about Crowdsourcing, Open Data, GIS, Web 2.0, and social media. Some authors discuss conventional approaches to user participation in information systems for e-government, such as using representatives, consulting with randomly selected citizens, or consensus among all citizens (Axelsson et al., 2010), but the question of "who to include?" is not addressed.

Outcomes

The articles examined show most of the benefits of citizen involvement in e-government services. User participation in system design improves intent to use e-government services, system-requirement alignment, accuracy, usability, and usefulness, capacity building, industrial democracy, and user interface. Participation benefits e-government, say some writers. Promoting civic and democratic engagement (Karlsson et al., 2012; Linders, 2011; Olphert and Damodaran, 2007; Oostveen and Van Den Besselaar, 2004); fostering trust in e-government services (Anthopoulos, 2007); and facilitating social innovation are not the articles' main focus, and their relationship to participation is unclear.

III. DISCUSSION AND RESEARCH DIRECTIONS

After analysing the selected publications on research designs, stakeholders, preconditions, involvement techniques, and results, we offer many research issues that need additional study.

Towards a better understanding of "the citizens": We believe this study topic has four important stakeholders: people, political representatives, software developers, and public officials. However, "citizens" is often used without definition. Future research should examine this abstract phrase. A citizen profile taxonomy must include incentives and relevance to service delivery engagement. People often link "citizen" with "end-user." The question "Who should be included?" emerges when considering citizen participation: their representativeness, digital literacy, profile, and talents will affect engagement programs.

Towards a more participatory research on participation: The evaluated publications show scientists incorporate people in their research. Despite this, we think further research is viable there. Determining how people want to be treated in e-government (e.g., active engagement or streamlined and efficient service supply) may be a useful starting point. However, all stakeholders must participate in this participatory research. These services are for people, but they

also affect politicians, software developers, and public personnel. To better understand the motives, viewpoints, and operational hurdles that prohibit stakeholders from engaging, the study area should encompass all of them. This expansion to all stakeholders would benefit e-government service assessments: many articles describe researcher evaluations, but few evaluate public organization or citizen evaluations.

Towards an extension of the participation methods: Most of the participation strategies in the earliest studies focus on small-scale interaction. Participatory design, user-centered design, and user innovation are examples. This finding has two effects. For small-scale engagement, we suggest exploring gamification, agile software development methods designed for e-government, and ingenuity in requirements engineering to encourage citizen participation in the e-government sector. Due of the variety of e-government users, significant involvement is needed to define the study area, even though limited-scale participation is necessary. We suggest performing study on the deployment of additional e-commerce literature approaches for the private sector (from enterprises with a significant user base) in a public environment. This goal may be achieved by studying Open Government service delivery-improving methods including Crowdsourcing, Social Media, and Web 2.0. These unique techniques' publications were excluded from this first analysis phase, but they provide potential research ideas that lay the groundwork for future studies. However, these methods are overused to gather public opinion, which obscures their impact on e-government services. Expanding the breadth of techniques allows for the study of each participation method's preconditions and results.

Towards a more integrated outcome evaluation: The selected papers emphasize public engagement without addressing the risks of poor execution. Participation pre-conditions must be addressed. Despite the reality that poor ICT skills hinder involvement, our study found little insights into the best environment for participation. Public sector cooperation is an autonomous research topic, so technological and organizational requirements may be better understood. Although most IS studies focus on conventional results, the e-government domain allows alternate outcomes. It's intriguing to link the participatory corpus of research to public administration research theoretical categories like "trust in government" or "democratic participation." Despite a developing link between these dimensions and outcomes analysis, we urge a large-scale investigation to validate this correlation and reveal the underlying goal.

Towards a unified e-participation research field: Identity crisis plagues "citizen participation in e-government service delivery" study. Though it includes all types of citizen interaction, e-participation is often confused with democratic participation. As e-participation advocates, we recommend public engagement in e-service delivery. For consistency with other articles, it may be called "citizen coproduction" like "e-democracy" and "e-participation". To harmonize the two aspects of electronic participation, link people' democratic engagement and service supply. However, this link will only be possible when these processes are advanced enough to examine a good sample.

IV. CONCLUSION

SLR was used to review public participation in e-government service delivery literature. Electronic involvement may obscure this understudied area, therefore this review tries to organize it. Like other SLRs, this one has limitations: fascinating articles may have been ignored owing to inadequate keyword research or the choice to examine only English papers. The selected articles explain this field's main topics: constituents, their needs, and e-government service engagement strategies and outcomes. These pathways may motivate future scholars to study "Citizen Coproduction" or "Citizen Participation in E-Government Service Delivery" in e-government.

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