

An emergent mechanism of inclusive e-Government design: The interplay of user design input and provider response

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Abstract. Open e-Government scholarship is meant to address the twin dimensions of openness: greater transparent access to data and more inclusive participation in design. Extant research, however, rarely addresses the inclusive design of e-Government, which is the focus of our research. We focus on broad desire for inclusive e-Government design by analyzing data from three countries – United Kingdom, Lebanon, and Qatar – involving (a) a qualitative survey of users seeking their input on e-Government design improvements and (b) interviews with service providers to elicit their views on inclusive e-Government design. Our findings highlight that inclusion may begin with seeking design input only; however, once the process is triggered, it can lead to what we call a landscape of inclusive e-Government design. More importantly, our paper contributes to the literature by elaborating the granular underpinnings of this landscape encompassing an emergent *mechanism* of inclusive e-Government design that consists of the following three components: (i) the enabling social inclusion affordances; (ii) the supporting processes; and (iii) the enabling organizational capabilities.

Keywords: Inclusive e-Government, technology-in-practice, action design research, affordance, mechanism

Key points for practitioners:

- Guided Emergence of e-Government systems, rooted in Action Design Research and practices of work is a realistic approach to growing inclusive e-Government design processes and capabilities.
- Seeking design input may be the initial goal of e-Government providers but the unintended consequence is likely to be a set of inclusion affordances, processes and capabilities that appear to emerge without any encouragement from the provider organizations.
- A proactive inclusive design approach would recognize the bundled nature of these affordances, processes and capabilities that are perceived and expected by users to form a holistic landscape.

1. Introduction

Broadly speaking, research on open e-Government involves the twin dimensions of transparent access to data and inclusive participation in the design processes (Piotrowski, 2017; Romme & Meijer, 2020). There have been several recent scholarly works that focus on the transparent access dimension of e-Government data systems and platforms (Ruijers et al., 2020a; Ruijers 2021; Piotrowski, 2017). These studies have produced insights into the importance of governance (Ruijers, 2021), data ecosystems (Ruijers et al., 2020b), and transparency reform (Piotrowski, 2017) in expanding transparent access to electronic data. Scholarly attention on the inclusion mechanisms and more specifically *inclusive e-Government design*,

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however, is somewhat rare in the literature (for an exception see, Romme & Meijer, 2020). This paper aims to contribute to this latter stream of research.

Consistent with the growing interest in the social practice view of e-Government, research on transparent access to e-Government data has also begun to employ the practice lens (Ruijers, 2021). In particular, transparent access to data is conceptualized as encompassing a set of technologies and methods that are embedded within social practices as they happen on the ground and evolve over time (Ruijers et al., 2020b). In our study of inclusive design of e-Government, we will rely on a technology-in-practice variant of the social practice lens (Ruijers et al., 2020b; Orlikowski, 2002). Accordingly, our exploratory research question is proposed as follows: *How do practices of inclusive e-Government design emerge?*

To answer this research question, we relied on a two-part data collection approach. First, we elicited feedback from users of select e-Government service websites in the United Kingdom, Qatar, and Lebanon to tell us via a qualitative survey how the design of the focal e-Government services could be improved. User feedback provided a way for us to better understand user interest in inclusive e-Government design, and initial results pointed to the need for greater design inclusivity. Eleven e-Government services were studied to establish a context for user comments and assess users' general propensity for engaging in the design of e-Government through inclusive approaches. Ultimately, the goal of the survey was to determine whether users' appetite for participating in e-Government design was typical or atypical, highlighting a general desire for inclusive practices. Second, and subsequently, we explored e-Government providers' perspectives on the corresponding inclusive e-Government design processes via qualitative interviews. We coded and analyzed the related issues surrounding the mechanism and contents of inclusive e-Government design. In turn, we uncovered a set of key observations that highlight how inclusive e-Government design may start with users providing design input on e-Government systems. This input then sets in motion a mechanism of actions that are broader than a narrow concern with e-Government design and points to an inclusive design of e-Governance albeit in unpredictable and emergent ways beyond the original intentions for soliciting feedback in the first place.

Our paper contributes to the literature on inclusive e-Government design in two ways. First, we show how asking for user input on e-Government design can lead to a largely unintended consequence: users may begin with merely providing design input but this engagement can evolve over time into what we call an *emergent landscape of inclusive e-Government design*. Second, we demonstrate that the emergence of this landscape is underpinned by a three-part mechanism: enabling social inclusion affordances, namely, *listening* and *instant response*, as well as counterpart processes, *unmoderated communication*, *feedback-driven redesign*, *systemic redesign*, and *government/governance reconfiguration*, and a set of emergent corequisite public sector capabilities – *understanding the value of user input*, *maintaining inclusion*, and *integrating input*.

The structure of the rest of the paper is as follows. First, we provide a discussion of relevant theoretical literature. We then describe data collection and analysis methods. Next, we present our findings. Finally, we end with a discussion of our contribution to the literature and conclusions.

2. Theoretical foundations

2.1. Nascent research on inclusive e-Government design

Broadly speaking, extant literature addresses two dimensions of open e-Government: transparent access to data and user inclusion in e-Government design processes (e.g., Piotrowski, 2017; Ruijers et al., 2020; Romme & Meijer, 2020). The majority of this research focuses on transparent access to data (e.g., Reggi

& Dawes, 2022).¹ For example, Ruijter et al. (2020a) show how open government data initiatives can be strategic responses to external pressure that in practice may result in “opaque transparency.” Ruijter (2021) focuses on collaborations that produce open government data in their efforts to tackle and successfully harness issues of inter-organizational governance vis-à-vis data sharing. Ruijter et al. (2021) apply design science and action research approaches to develop a framework for complex public sector interventions that rely on the notion of “probing” for developing and assessing open government data initiatives. In particular, the focus of Ruijter et al. (2020b) on “open government data work” as the practices on the ground that evolve and become social-material constellations is particularly interesting in the context of open government. Drawing on the framework of practice lens (Orlikowski & Feldman, 2011), Ruijter et al. (2020b) also highlight how certain factors – such as situated organizational structures, technology platform properties, and platform usage practices – intertwine to produce certain open government data outcomes over others.

If we define inclusion as a combination of providing input for design by users, and subsequent actions taken by providers to extend the openness of e-Government, then studies of inclusive e-Government design are somewhat rare. Specifically, *how* the mechanism of inclusive e-Government design is potentially triggered and *how* it occurs in practice remain somewhat underexplored and under-theorized. Addressing the latter gap is the focus of our research. Next, we present the theoretical scaffolding that we will employ to study the emergence of inclusive e-Government design in practice.

2.2. Framework to study emergence of inclusive e-Government design

Our theoretical scaffolding to study inclusive e-Government design will attempt to analyze the following three elements: (a) user and provider practices in the context of engaging with the inclusive process; (b) deliberative, emergent actions taken toward systems within the build-implement-evaluate (BIE) cycle; and (c) absent or imagined functionalities of e-Government platforms from the perspective of users that trigger requests for more inclusive e-Government design.

First, in addressing the component “a” above, we rely on Schatzki’s (2002: 240) notion that “performance of doings and sayings compose practices.” We further rely on the adaptation of Schatzki’s (2002) framework to the technology-in-practice perspective (Orlikowski, 2002). Given the messy and contested nature of e-Government inclusive design phenomena, we adopt the technology-in-practice perspective of Orlikowski and Yates’s (2006), which calls for scholars to unpack the underlying phenomena as follows:

At least some account of what actors (at various levels within and across organizations) are doing with the technology “on the ground” and over time . . . Such approaches are particularly valuable [in] accounting for the *messy, dynamic, contested, contingent, negotiated, improvised, heterogeneous, and multilevel character* of [e-Government] in organizations [and] everyday practices to allow us to articulate relations between work practices, situational contingencies, and organizational patterns (p. 132). [italics added]

Second, in regard to “b,” the notion of guided emergence during a BIE cycle is helpful. That is, the e-Government’s utility for the user emerges as an ensemble of interacting elements between technology and its social context (Sein et al., 2011; Spagnoletti et al., 2015). Indeed, guided emergence is meant to conceptually bridge the previously separated BIE phases of build, implement, and evaluate. In other

¹It is worth noting that open management scholarship, e.g., focusing on open strategy for instance, addresses inclusion more evenly (Mack & Szulanski, 2017).

words, these stages may appear deterministic and separate at first glance but in practice are highly intertwined and become highly emergent processes. Thus, e-Government designers create preliminary artifacts which then are shaped by e-Government users' actions and discourse. Indeed, in the context of inclusive design of e-Government systems, guided emergence underlines the importance of understanding the interplay between the provider's initial design and subsequent user evaluation and design input.

For "c," to conceptualize and analyze users' evaluative views of e-Government system functionalities, we draw on the notion of affordances, namely, the imagined affordances of technologies and the social affordances of situations and persons (Faraj & Azad, 2012; Nagy & Neff, 2015; Rietveld, 2008). Users often have expectations about technology that shape how they approach it and the action possibilities they perceive. These expectations, however, may not be hard encoded into the technology by design, but they nevertheless become part of users' perceptions of the actions that are available to them. For instance, greater than 50 percent of Facebook users on a regular basis are rarely aware that their Facebook feed is structured by an algorithm that has little human intervention beyond the original design (Eslami et al., 2015). This is the essence of what is called an imagined affordance – an action possibility that is socio-materially constructed (Nagy & Neff, 2015). Although related, traditional imagined technology affordances and imagined social affordances are distinct (Rietveld, 2008). For example, the action possibility of an object, say a British mailbox, and the associated social affordances of its specific institutional context will depend on the existence of a background practice—the British "community with a postal system" (Gibson 1979, p. 139). Social affordances, a subcategory of affordances, can be thought of as the possibilities for social interaction offered by a milieu: a friend's happy face invites a high-five, a person by a water cooler getting a glass of water can afford a conversation (Rietveld, 2008).

We will employ the above three-prong framework of practices, guided emergence, and affordances to analyze and present our emergent inclusive e-Government design findings.

3. Research methodology

3.1. Context for analyzing inclusive e-Government design

To uncover how inclusive e-Government design emerges in practice, we devised an approach through which we captured users' evaluations of existing e-Government services and their rich interactions with the providers of these services. Our method can be characterized as observation-centered (Baptista et al., 2017; Mullarkey & Hevner, 2019) and as probing (Ruijter et al., 2021). Capturing observations and probing perspectives enabled us to analyze the potential evolution of e-Government service design and, more specifically, to identify possible system improvements as objects of inclusive e-Government design practices.

Initially, we conducted preliminary discussions with key e-Government researchers and practitioners. These discussions were under the auspices of advancing e-Government initiatives in developing and developed countries. As an integral part of our inclusive e-Government design research initiative, we implemented a process for capturing the views of citizens and providers on e-Government services on a large scale. Three key issues required our attention. First, how do we collect data from e-Government users and providers? Second, what framework would help uncover insights from users and providers? Third, which protocol would facilitate data processing and analysis? We discuss how we addressed these issues next.

3.2. Data collection rationale and process

To select the country cases and e-Government services, we employed a theoretical sampling logic (Yin,

2018), which provides visibility to the phenomena of interest to us: how users and providers engage in inclusive e-Government design practices. Accordingly, our data collection followed a two-stage approach. In the first stage, the study focused on collecting online feedback from users of 11 e-Government services (see Appendix A). For the countries included in the study, their stages of e-Government development, according to the UN e-Government Development Index, varied greatly (United Nations, 2022). The services within the countries and among the countries varied, as well. The diversity of countries and services enabled the visibility of our phenomena of interest. That is, even amidst contextual differences, we considered that the majority of users would be expected to seek a more inclusive approach to the design of e-Government services regardless of how providers engaged in the process.

The current study was part of a larger effort to assess users' and providers' views on e-Government initiatives in three countries – the United Kingdom, Lebanon, and Qatar. To show that the expectations and practices of inclusive design emerge and evolve around what e-Government users and providers do and experience through interactions with the systems and with each other, we aimed to facilitate the process of collecting participants' comments and input across a broad set of parameters.

Thus we developed and implemented a voluntary survey questionnaire as the first stage of data collection. Users were asked to fill out the questionnaire online through official e-Government websites after using the corresponding e-Government services. The soliciting trigger was very similar to most e-Commerce websites where users are prompted to "Please answer a survey!" If they clicked on the "button," they were then directed to a website that included the questionnaire. The questionnaire consisted of two components: 1) a set of questions related to assessing service quality and 2) two open-ended questions. The first component, the service quality questionnaire, is beyond the scope of this paper and the analytical framework used herein. Instead, we focus on the second component, which asked users to express their opinion in free-form text in response to two prompts: (a) whether the e-Government service design meets their needs and why/why not; and (b) any opinion about the design of the e-Government service and how they could improve its design. Data collection was administered in the three countries as follows: in the United Kingdom via a private organization for a fee; in Lebanon via a cabinet ministry in charge of national e-Government portals and websites; and in Qatar via a cabinet ministry overseeing national Information and Communications Technology (ICT) projects. This variation in the organization attending to data collection did not impact the response contents of the survey questionnaire. A total of around 3,000+ users (around 15% from Qatar, 37% from Lebanon, and 48% from the United Kingdom – these are roughly in line with the respective populations of these countries in our dataset) provided feedback through the questionnaire on the design of e-Government services. These users provided around 5,500+ comments.

In the second stage, in-depth qualitative interviews with e-Government provider representatives were conducted to discuss their experience in soliciting user feedback regarding the design of their services. Participants from Lebanon were interviewed in person, and e-Government providers in the UK and Qatar were interviewed over the phone. The interviews followed a semi-structured format. In total, 58 participants were invited to the interviews, out of which 32 agreed to be part of the study (16 participants from the UK, 10 from Lebanon, and 6 from Qatar). Altogether, 38 interviews were conducted, and each interview lasted 35–45 minutes. The participants were mainly managers and senior/junior staff of public ministries and third-party organizations (e.g., IT suppliers) who provided support to e-Government initiatives.

The interviews followed a standard protocol to ensure consistency. Each interview began with an explanation of the research objectives, followed by the facilitators explaining that the data would be collected and examined anonymously and discreetly in compliance with the institutional review board

criteria. The interviewers then followed the interview methodology, which included a series of semi-structured questions focused on the providers' experience with the design and delivery of e-Government services. More specifically, the questions (see Appendix B) were designed to capture the providers' perspective on the evolution of the e-Government services offered and on how such services could be (re)designed by incorporating users' feedback and addressing users' needs (i.e., engaging in inclusive e-Government design). The interviewers made it clear that participants' views and comments would be processed anonymously; in turn, they asked participants to speak freely and express openly their impressions of the phenomena they encountered in situ. Copious notes were taken during all discussions and were subsequently entered into NVIVO for analysis.

3.3. Framework for analyzing "would-be" features and processes

Comments and interview data provided details in the participants' own words as to why they regard e-Government as difficult or easy to use and deliver, why users are not using online services to perform certain tasks, and what features users need or expect within a system or service. Such data can be treated as starting points for identifying design improvement opportunities. Furthermore, open-ended responses and interviews are thought to be exceptionally valuable for gaining insight into institutional and technical matters surrounding issues like inclusive e-Government design. Drawing on the guided system emergence view of design (Pries-Heje & Baskerville, 2008; Sein et al., 2011) and technology-in-practice (Orlikowski, 2002; Orlikowski & Ytes, 2006), our work analyzes e-Government users' and providers' perspectives toward inclusive e-Government design.

Our analysis also enlists the notion of affordances to capture a rich set of functionalities that are intertwined in the context of e-Government use. Since the affordance lens is fairly new in its application to e-Government research, we offer a quick overview of how we employed the construct using conceptualizations offered by Faraj and Azad (2012). First, affordances are like functionalities provided by the e-Government's technological materiality, action possibilities that shape and favor but also constrain use. Materiality embodies various aspects of the technology, including its physical details, form, and function. Second, however, these action possibilities are "not simply based on materiality but also on relational properties that arise due to the symbolic and social" aspects of the context (Faraj & Azad, 2012, p. 253). Thus, an affordance links a specific feature/functionality to both an actor and a usage environment. It is a "multi-faceted relational structure," a "reciprocal relation" between a technology (materiality, functionalities) and an actor (objective and practices) in a focal context (Faraj & Azad, 2012, p. 254).

Then, to be able to extract potential affordances from the survey and interview text data as action possibilities, we employed a narrative-inspired method (Abbott, 1992; Pentland, 1992; Pentland & Feldman, 2007). Accordingly, we presumed that each occurrence of an affordance as an action possibility would involve an action *verb* and would be projected forward or *for* accomplishing something – a practice. To identify imagined affordances or lack of action possibilities, we looked for narrative segments that included a user "recommendation" or "demand" for a capability that did not exist or an explicit negative sentiment stating a desired functionality, respectively. Our conceptualization has some affinity with the method of detecting a "narrative network" by Pentland and Feldman (2007).

3.4. Data analysis protocol

In line with our research question, "how do practices of inclusive e-Government design emerge," our empirical analysis focused on studying citizens' feedback and e-Government providers' interviews. Here

we are concerned with discovering the “how” as a mechanism. Our notion of mechanism is consistent with Elster’s (2007, p. 36), whereby: “Mechanisms are frequently occurring and easily recognizable patterns of action . . . They allow us to explain, but not to predict.” We examined participants’ comments and selected the ones that included more than one word and conveyed meaningful sentiments (i.e., we effectively excluded one-word comments like “great” and comments like “I don’t care”). Subsequently, we ended up with around 4,000 usable comments (74%), almost three-quarters of all comments. We initially coded the usable comments to identify the ones that hinted at providing *design input* to e-Government services. Such comments represented the majority of the users’ feedback – or about two-thirds. Next, we analyzed these comments as well as the notes from the providers’ interviews to determine potential meaningful inferences from which we could derive key preliminary observations related to a mechanism of inclusive e-Government design. Inspired by Gioia et al. (2013), our data analysis and coding resulted in the three themes that we describe next.

Theme 1: Social Inclusion Affordances for Design. While our initial processing of comments and interview data was anchored in participants’ references to various e-Government services, our second pass through the data focused on participants’ need for certain enabling affordances. Specifically, enabling affordances facilitate what is functionally needed from a service so that there can be a more inclusive adoption of the design input. For example, one participant mentioned that they want to “interact with government agents who can see the comments, take them seriously.” A pattern in the data started to emerge pertaining to users’ expectations for social-media-like interactions with e-Government providers, in particular, for providers to “see and respond to posts immediately” and “listen to their comments and needs.” These enabling affordances appeared to facilitate an inclusive design of the service in terms of both delivery and improvement, and they were prominent across the interview data and survey comments. After two rounds of coding, we arrived at the two enabling affordances of *instant response* and *formal listening*. We refer to these as *social inclusion affordances for design*.

Theme 2: Design Inclusion Support Processes. Another pattern that emerged from our analysis of survey and interview data that focused on inclusive e-Government design related to *how* government entities would support the above social inclusion affordances for design. This process aspect was prominent in the majority of our data. One participant, for example, highlighted the need for internal restructuring of government functions to be able to handle and support inclusion transparently. Many user comments hinted at the need to “give voice” and “freedom of choice” to users openly. Unlike traditional top-down government decisions in service design, participants were asking their government to “act on their comments to finetune services.” On the other hand, the providers’ comments reflected on the challenges of working in silos to enact change and raised the need for “inclusive change across government entities.” Another interesting theme that emerged from the data conceived of redesign as beyond “revamping services, to include government structures.” After further analysis of the data, we aggregated and consolidated the codes that converged around four sub-processes, namely *unmoderated communication* between citizens and government officials, *feedback-driven redesign* of e-Government services, *systemic redesign* of e-Government structures, and *reconfiguration of government and governance* to support social inclusion. We collectively refer to these as the *design inclusion support processes*.

Theme 3: Design Inclusion Organizational Capabilities. The third part of our data analysis focused on how certain e-Government provider participants expressed the need for potential competencies of their organizations to handle inclusive design. For example, one participant highlighted how organizations in the digital space should “embrace user input in design and development,” similar to how key social media and web search engines adapt to how users are using their services. Another participant brought up the readiness of their organizational unit to open up about what they do to various information sources,

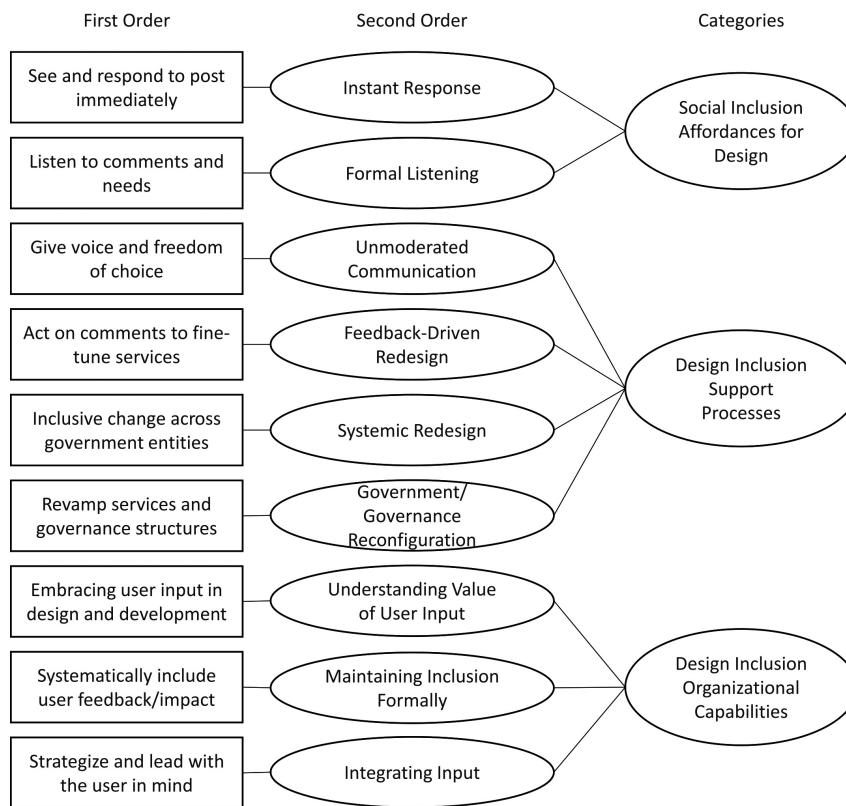


Fig. 1. Mechanism components of inclusive e-Government design resulting from data analysis.

like “openly tracking and reporting user feedback and impact,” processes that used to be performed in tightly controlled settings. Other providers reflected on the need to “strategize and lead with the user in mind,” unlike traditional e-Government strategic planning and execution, which used to be mainly government-centric and driven by the organization’s mission. After two additional rounds of coding, we converged on three dimensions under this theme, including *understanding the value of user input* to e-Government design, *maintaining inclusion* in analyzing and reporting service design and development, and *integrating input* in better managing and leading an inclusive design approach. We refer to these themes collectively as *design inclusion organizational capabilities*. Figure 1 depicts the Gioia diagram of the categories that resulted from our data analysis.

4. Findings

We now present our findings under three headings. First, we describe how users asked for certain broad additional affordances. Second, we discuss how certain inclusion processes were also presumed by users and providers to be in place, already supporting these affordances. Third, we describe the organizational competencies that emerged to develop an inclusive e-Government design.

4.1. Imagined social affordances for design inclusion

The solicitation of information from users on e-Government design via qualitative survey had triggered

expectations for new modes of user-government engagement beyond the survey's original intent. At the same time, these same affordances conflicted with rising user expectations for the social affordances of follow-up and follow-through to be implemented by e-Government service providers. Below, we provide an overview of the two key imagined social inclusion affordances.

Affordance 1: Instant Response. After being asked and providing design feedback, users appeared to expect near-instant responses. Although users' input was clearly announced as unattended, citizens appeared to expect that it would be responded to by government agencies, sometimes "on the spot." Ironically and coincidentally, this expectation for immediate feedback appeared to have been triggered by and was associated with government agencies seeking input on e-Government design. In other words, users appeared to hunger for new and additional forms of interaction beyond providing one-time input into e-Government design. Some of the system managers we interviewed as providers responded as follows:

We often did get the right kind of information provided by the users but then they would start using the facility as if it is live chat.

So far as I remember we have barely been able to get citizens to interact with e-Government services. Now, we ask them for improvement comments and they treat it as if it is a chat app.

It was really "interesting!" We had deliberately decided not to raise expectations but it was happening whether we liked it or not.

Other system custodians we interviewed pointed out a related aspect of this phenomenon:

So people would literally pile up additional points and ask questions. "Why is this e-permit feature not offered by this other agency?"

They were open-ended questions that users expected the specific e-Government service provider to respond to almost on the spot.

We had not advertised this as a moderated service.

Users expected this kind of response to be among the duties of employees who worked for the focal government agency regardless of their interaction with the actual e-Government service. Several e-Government IT staff mentioned that some comments related to the expectation of additional services: "For example, they would ask, when are we adopting and implementing social networking, instant messaging, and streaming?" Also, a manager at another government agency, highlighted how solicitation of e-Government design input stimulated the expectation for more online interaction with users:

The users expect that their comments are looked at and responded to. It is as if they think it is totally synchronized so every government agency follows their comments and will see and respond to their post "immediately."

Another IT staff member remarked,

I saw subsequent comments like: "Aren't you notified that when we provide a comment on this e-Government service?"

Still another agency employee noted,

Wow that is surprising! I mean, usually, I do not even visit our own HR content management system or internal agency blog. But now somehow users expect us to follow their comments, on a continuous and round-the-clock basis.

A webmaster for one of the government agencies reflected,

I think people have a mental model of social media. Nobody told them that this is a cost-saving tool and our agency is cutting down on staff we cannot deploy more staff to make comments on their comments!

Affordance 2: Formal Listening. To be sure, the input provided by users pointed to wider and deeper feedback on existing designs as well as new functions, or imagined affordances. Indeed, in some cases input from online media channels aligned with existing e-Government philosophies and system designs (e.g., paying parking fees). Meanwhile, in other cases, such as issuing permits, we noticed the “functionalities” expected by users were broader; sometimes they were not even e-Government system- or function-related but more general, like expectations for listening towards better governance. For example, in several cases user engagement with the survey resulted in articulated sentiments that expressed expectations related to listening:

Opening up to us, puts us [citizens] in a position where we have the knowledge and the trust in our government to know that the government is listening.

Look if they listen then we expect things from them [our government] not just better service quality but better governance.

As these comments show, user feedback was expected to be treated as if it were solicited and recorded by the e-Government service via a formal feedback structure. That is, users expected relevant agency personnel to listen to their input. A user provided this comment:

Look I had to be really prescriptive and very, very detailed in some of the comments because I was not sure why the e-Government service design was so arcane compared to what we are used to for instance at my bank.

Another user mentioned,

I think the government has forgotten we are in the 21st Century. This is the internet age. They cannot ask us what to fix and then disappear.

The above two social inclusion affordances for design highlight the emergence of novel expectations associated with soliciting online input from users. It is as if providing design input of this kind goes hand-in-hand with the expectations that the government will engage with structurally embedded social inclusion affordances in two ways: by processing and responding to each comment and by regarding such interactions as a means of formal listening as well as follow-up.

Next, we explore the emerging expectation for processes of user-government interaction that extend beyond the narrow scope of users merely providing input on e-Government design alone.

4.2. Expectation of design inclusion support processes

In this section, we focus on the emergent design inclusion processes of expected interactions, which we identify as counterparts to the imagined social inclusion affordances of users. That is, the aforementioned social inclusion affordances seem to justify counterpart processes that users expect to be in place above and beyond soliciting user input on e-Government design. Accordingly, a novel form of interaction between users and service providers appears to be unleashed, leading to a pattern of reciprocal user participation and provider response. We suspect that this interaction, in large part, can result from taken-for-granted norms informed by the macro-level environment and general discourse around openness, which extend beyond the focal empirical context. Next, we conceptualize and describe four processes that come to be expected by users based on our analysis of the views they express.

Process 1: Unmoderated Communication. This expected process characterizes a situation where users perceive wanting to be involved and desiring little or no restriction on the information they provide. As a result, frustration can ensue when they start to engage with the agency and provide design and other input, but they know that their posts may be filtered. In addition, dissatisfaction can arise stemming from the perceived potential for low consideration given to certain types of user input. Moreover, the potential for an incongruence may arise between a taken-for-granted ethos of inclusion and involvement beyond e-Government design input. One user captured this possible incongruence as follows:

Look, it is funny to be offered a choice and then be told 'actually, we can have any color as long as it is black.' When people are given a voice or a choice, then they expect to be listened to.

Similarly, another user responded in this way:

You need to listen to us, and I mean there should be a difference . . . this is not a comment box at a restaurant.

Another citizen-user demanded,

I want to know what you are going to do with my input it is not enough to ask for it!

Process 2: Government Accountability for Feedback-Driven Redesign. This process characterizes a situation in which greater inclusiveness leads to not only the expectation of inclusion but also user engagement in directing outcomes and means. Typically, the open process of soliciting information ends with users participating in the process of providing information through online platforms. This limited engagement can be disappointing to citizens when the government agency or its employees are perceived to exhibit no accountability for addressing user input. Ultimately, user dissatisfaction can emerge from the limited visibility and shareability of e-Government design and governance commentary itself in spite of the greater inclusion afforded. For instance, we noticed expectations for seeing, acknowledging, sharing, and acting upon feedback in several situations. After providing input, citizens appeared to want some form of reciprocation, namely, their comments to be acknowledged and deliberately incorporated in the e-Government design and beyond. This desire for reciprocity is illustrated by the users' sentiments captured in the following different comments:

When I give my feedback, next I want to know how the government is going to do its job differently. If I ask for new features the implication is you'd deliver them. I want to know, if the city is being accountable.

Involving us does not end with our input, I want to know where are you with that input, how it was handled and how it changed the design?

Typically, most provider organizations are unaware that making their e-Government design more inclusive may trigger such a reaction. Indeed, by taking steps toward more user inclusion and transparent information solicitation for e-Government design, organizations often are unprepared for this reaction.

Process 3: Systemic Redesign of e-Government Services. Alternatively, some users appeared to have focused on the value of added transparency via an online commenting technology while, at the same time, wanting a more transparent and inclusive e-Government across the board. This process occurs in situations where users perceive information about e-Government design as opened up and more visible but also narrowly applied to only certain services and not others. In other words, we observed users exhibiting trust in information gathering to improve the focal service, along with mistrust in the government's capability in extending the information gathered to other domains. For example, users seemed to feel that if the government is seeking information about the design of e-Government in the trademarks registry related to

looking up trademarks on an online page, the government should be open to receiving information about its registration infrastructure as a whole. This expected process of interaction was the focus of several comments by different respondents as evident below:

The government is moving in the right direction by asking us how we want the renewal of the TV license and ticket payment. But they should be open for us to question why not a one-stop-shop for all services.

I mean it is almost like putting an eight-cylinder engine in front of a horse cart – you need to synch the two!

So there's this little pocket of online systems that's highly digital, but still... the core is this old clunky rigid almost mechanical organization behind it.

Why do we have to go to the agency payment kiosk, I should be able to pay with a cell phone-like refill card that I can get anywhere?

Process 4: Reconfiguration of Government/Governance. This process captures the essence of situations where public sector organizations use virtual means to open up the design of their service to user feedback but encounter users who not only insist on e-Government design input but also demand a more participatory approach to and structure for the government's operations and processes as a whole. A director of IT services at one of the government agencies indicated they had come a long way in being more inclusive and transparent but faced obstacles in developing conducive structures aligned with expectations of what inclusion means to citizens:

We are a government and we are on a digital transformation path. But citizens only see the interface and they start demanding not just e-Government but e-Governance. But the journey toward internal transformation is longer than most citizens realize.

While users expect commensurate processes that support open interactions, the reality may be that there is a tension between soliciting information and interacting with the more established, highly centralized bureaucracies of existing government agencies. For instance, if users perceive they are contributing openly to government service design, they may go on to engage in critiquing the design of public governance itself. Government managers, meanwhile, through their traditional discretionary powers may limit the modality through which users can provide input to general governance redesign. Thus, a disconnect may arise between the intent of inclusive e-Government design and the existing configurations that characterize the dominant legacy form of government interaction with citizens. Further, even state-of-the-art IT and online systems often fail to enable government processes that are meant to do more than solicit feedback from users. A manager alluded to this situation in the following remark:

Inclusion and transparency to improve e-Government design is not aligned with the agency's governance approach and management: inclusion in this case only involved the communication of users' perspectives, but not necessarily democratic decision-making on the forms of governance. But it seems while we asked for the former we also got the latter – "You get two for the price of one!"

Government organizations are facing users' expectations for the supporting processes of social inclusion by rethinking organizational structures to consider and respond to e-Government user feedback beyond its original intent. Moreover, our analysis suggests that this expectation is just a starting point; users' subsequent expectations for participation grow exponentially. In particular, users start expecting to have input on just about every aspect of government – its design and functionalities, if not governance as a whole. In most cases, however, government agencies had rarely designed proper structures to enable information gathering as well as capabilities to employ that information for rethinking public governance.

4.3. Organizational capabilities for supporting inclusive e-Government design

In addition to the above imagined affordances and counterpart processes, certain capabilities were highlighted by users and providers that could have better facilitated design inclusion. These potential capabilities on the part of government agencies emerged as potential enablers through the user-provider interaction process. In particular, beyond soliciting input via online qualitative surveys, certain corequisite capabilities appeared to be needed so that government entities could absorb nascent online feedback and exploit benefits from these interactions in inclusive e-Government design. Below, we discuss three organizational capabilities that can facilitate successful inclusive e-Government design: (1) understanding the value of user input; (2) maintaining inclusion through formal routines and behaviors; and (3) formally integrating input into the design process.

Capability 1: Understanding the Value of User Input. One expects this capability to develop and evolve into a structural response to inclusive e-Government design. Initially and for some government organizations, soliciting feedback about the organization through qualitative surveys has not been common. Subsequently, however, internal recognition and a deeper understanding of the feedback process emerged for these government organizations. They started realizing that receiving online feedback can be a new resource for them, one that may have value, needs attention, and requires management. For example, the manager of a major government portal said about the gradual recognition of feedback as a useful resource for government organizations:

Before we started the online feedback our team used to pay lip service to user input for the simple reason that it was hard to come by or it was mostly in the form of complaints. I know that IT designers have a bad reputation more or less operating by the designer/developer conventional wisdom “they listen to their users but ignore what most of them say.”

Another analyst reflected on the new behavior that resulted from receiving comments:

I have to say you know that we had the experience of getting actual feedback and processing it, we as analysts have started to “listen” differently, and maybe I can say they’ve grown more confident in “trusting” the comments. But we have a long way to go.

Online feedback via qualitative surveys is often serendipitous and unstructured, and attending to it usually falls outside the purview of the government agency’s management. Because this type of feedback solicitation typically marks a departure from fixed or close-ended citizen satisfaction surveys, for instance, it may necessitate novel methods for addressing the input received. Online qualitative surveys enable government agencies to access more direct input from citizens about what they need and want from their government. That is, fresh means of coordinating, monitoring, measuring, and reporting this kind of user feedback emerge as useful information for e-Government designers, as captured in this quote:

Traditionally every major unit and its head, including the agency head, got a report every year of citizen input, and there was also one by the CIO that gets presented to the Mayor. We are reviewing this to see if a modified process affording a rich spectrum of the online input to be passed on without massaging the message for the top management consumption.

In other words, the organization acquires awareness gradually of its new resource, which it had been largely unaware of as a source of feedback information. In addition, the potential for structural change emerges such that the rank and file become more in tune with the value online feedback offers and the need to manage the qualitatively distinct information it offers.

Capability 2: Maintaining Inclusion through Formal Routines and Behaviors. This process exhibits the particular formality we may associate with standard routines albeit geared toward processing feedback within the organization. Usually, such formal approaches pertain to an organization's home-grown strategies for monitoring and using online posted data. Some organizations then use this information to recognize engaged employees and provide incentives to the rank and file to conduct further follow-up on feedback features that have the potential for strategic e-Government impact. For instance, a national agency developed a rating system for assessing employee engagement in response to the situation discussed in the following interview excerpt:

Look it is simple, does your KPI include getting the input of users, or are you just showing up and keeping the chair warm? At the end of the day, if we are serious about soliciting input then we should walk the talk, otherwise, it is one more thing that government pays lip service to.

Some organizations used more advanced methods to monitor how their units interacted with users vis-à-vis absorbing user comments and attempting to incorporate them as features. Indeed, another government IT manager highlighted a more state-of-the-art means of keeping track of user feedback in a content management system:

Because of our IT service ethos, we are used to employing automation to record how many users, as well services they reference, and a few other parameters . . . this gives you a good overview of what they are asking for in terms of systems requirements. The benefits of this system appear to justify its cost. We can point to it and say this was added because they asked for it.

Some government agencies, meanwhile, developed linkages between the measurements afforded by such systems and how they would provide rewards to their rank and file. For example, a national agency with an ICT mandate published a periodic report that evaluated how well the agency met the objectives of e-Government user input via a monthly newsletter. The agency's lead on this initiative had this to say about it:

The newsletter is our way of legitimating the feedback process, getting employees to take them seriously, and also signaling to the public that we mean business. I am sure some citizens watch what we do like an eagle.

These legitimating structures also worked to shore up employee support. A digital government coordinator described the significance of reporting statistics on feedback volume in this manner:

At the end of the day in government, you need to count it. "We do not count it does not count." Most of us understand that these statistics are merely inputs into the design process. But it is all about changing the mindset inside and outside the government.

Some organizations demonstrated even more advanced capabilities. That is, user feedback appeared to be more organically combined with the organization's ways of working. Moreover, such integration appeared to set in motion some changes in the organizational culture, involving notions of trust toward citizens and even the organization's identity toward public service. Within such context, user feedback appeared to be more than a tactical one-time information input toward e-Government design and, rather, a transition into influence over governing processes and philosophies.

Capability 3: Formally Integrating Input into the e-Government Design Process. Connecting feedback from online sources with the design of e-Government is a sign of an open organizational capability being developed in a real way. In such a case, inclusion is more than words from a government agency's top management; rather, users and providers are more concretely working together toward the co-creation of

e-Government. This ethos for a public agency to grow its capability to employ feedback gleaned from online sources is visible in the following statement from a manager:

... water slowly rises in temperature before it boils. For us, open e-Government is kind of rising in temperature. Our own government rank and file and managers largely see e-Government and even users as a source of a nuisance but as their confidence builds and as they trust the citizens' views by seeing the citizens aren't just a burden (though some appear to be). ...

Another supervisor said,

They [citizens/users] are giving feedback for a good reason, and they know what they want and what they cannot easily use, we are starting to see how to include their comments in specifying e-Government design in the next version.

Becoming more open to the design of e-Government at the strategic level may be triggering a new mindset among management and leadership. Some managers, for instance, appear more at ease in working toward an open e-Government design (e.g., one said, "We need to be less uptight and let go..."). Managers may also recognize opportunities to affect incremental changes in their organizations and hopefully, in turn, rise to the top. Although less common in our sample of managers, an astute comment by an online community manager of an NGO, one that helps citizens influence governments in their e-Government initiatives, highlights how some leaders just get it while others have a hard time with it:

At the risk of sounding like a cliché, the culture or mindset of the new public e-service provider and by extension, their approach to e-Government design is more than giving people access to technology – but listening to them. We would have never thought government employees now are followed on social networks by citizens because we started listening to citizens.

In parallel, another manager pointed to the emergence of a more inclusive organizational configuration which appeared to have been unleashed by the technology but then went beyond it:

The new agency administrator runs a blog on a city social network called "ConnectMe" [pseudo name]. His motto is post whatever – this is not technology though. It is his philosophy. His managerial approach is to speak up. Over time there is a subtle change you sense as people are feeling more comfortable in posting anything to do with e-services.

Indeed, another employee reported,

Now users say, "It is nice to see the government is now giving us a voice, which we rate by saying this service sucks, but also be positive and say wow that is nice I can now get my parking permit and water fee on the same portal." Users are demanding to be able to knock government's e-door and be heard and listened to.

This type of trajectory was apparent in another government agency whereby a new chief administrative officer's rise and appointment were perceived to be associated with her savvy in employing online communications. A leading IT specialist characterized her as "the very definition of an open government native" because she had stated, "the days of backroom closed-government and hide from citizens are over." Her view is that "a lot of agency business can be conducted in an as open manner as practical," though the reality is still far from it. This administrator appears to be trailblazing, going much further and beyond merely offering capabilities for users to engage with e-Government to provide input on missing technological functionality; instead, she is moving toward opening up the government's business and public governance in a strategic manner.

Among certain public agencies, a pattern of work emerged whereby the effect of soliciting and engaging with user feedback extended beyond government operations and services to public governance at a much higher level. At one such agency, the adoption of online input appeared to deeply encompass the notion of public governance. The far-reaching nature of this impact is highlighted in this comment from the agency's Chief Information Officer:

The benefits of social media and e-Government are beginning to be felt. But once we started this journey, and as we go more digital, we see the contrast between what is digital and what is outdated and legacy. For now, they co-exist alongside but a more digitally enabled organization internally having the right capabilities is unleashed.

At the same time, different government agencies, seeing the consequences of the above contrast, engage in diverse paths toward building the capability for digital transformation. For example, a national government portal unit had established a parallel function referred to as "GovSmart" (pseudo-name) to operate according to a more streamlined and citizen-centric approach. According to the manager, by creating the parallel function of GovSmart the hope was to establish an inclusive platform:

Citizens and e-Government users freedom to engage in multiple ways with our government agency. The way that GoSmart works, the systems, and the functions provided to the public at large openly in a largely inclusive and transparent way that is far-reaching and we hope citizens will engage.

According to this manager, the mission for GovSmart was twofold. First, it was grounded in Buckminster Fuller's maxim, "I am sure you have heard, the saying by Fuller, 'If you want to teach people a new way of thinking, don't teach them . . . give them a tool, whose use will lead to new ways of thinking.'" Second, he explained,

You cannot ask our employees to do A but reward them for B. If we want to go the open government route enhancing inclusion and transparency . . . technology is only half the battle, the other half is building the right organizational capabilities . . . which you discover as you start on this road.

5. Discussion and conclusion

5.1. Summary of findings

To recap, this study begins with the following scenario: e-Government providers start wanting more input from users about the design of e-Government, and, in turn, users are asked to provide information about the design. This solicitation ultimately signals the beginning of a process that extends far beyond the receipt of design-related feedback, driven by three key factors. First, users come to expect that certain social inclusion affordances will inform their engagement beyond providing design input. Second, as a counterpart to these social inclusion affordances, a set of support processes appear to underpin users' engagement in the practices of inclusive e-Government design. Third, commensurate with these affordances and processes, provider organizations appear to start developing a set of organizational capabilities that enable them to respond and interact with users. We assemble these three components into an overall mechanism as recurring and recognizable patterns of action: inclusive e-Government design is triggered by seeking design input, which then intertwines with the actions of provider organizations, leading to the emergence of an inclusive e-Government design mechanism. Figure 2 illustrates the proposed mechanism.

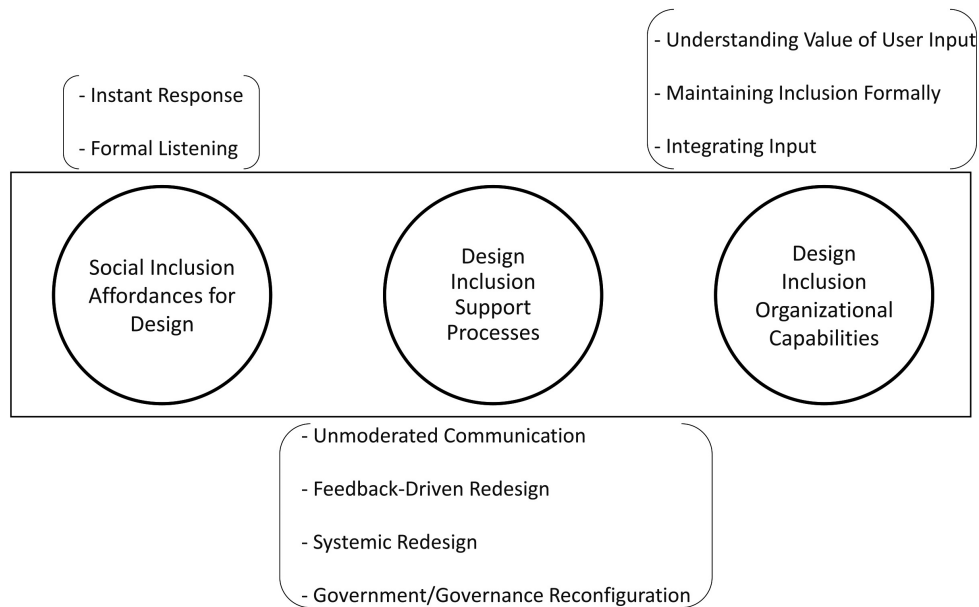


Fig. 2. Emergent mechanism of inclusive e-Government design.

The left-most part of Fig. 2 highlights how the two social inclusion affordances – instant response and formal listening – come to be expected by users after they start providing e-Government design input. We characterize these affordances as imagined to exist by the users (i.e., initially or even later they may be absent; nevertheless, users come to expect them). In the middle of Fig. 2, the affordances appear to be dovetailed with a set of support processes – unmoderated communication, feedback-driven redesign, systemic redesign, and government/governance redesign – which collectively produce a generative effect that results in the inclusive design of e-Government taking shape over time. Third, as provider organizations start to interact with users and process their inputs, a set of organizational capabilities emerge, as is evident in the right of Fig. 2. These capabilities include understanding the value of user input, maintaining inclusion formally, and integrating input, which are all corequisites to the affordances and processes.

The three components of the proposed mechanism evolve in an emergent manner, and as far as the evidence from our research shows, no sequentiality is implied; however, the components emerge in a holistic, organic, and endogenous manner. Indeed, it is difficult to contemplate this mechanism without the simultaneous existence of affordances along with the generative effects of the requisite processes as well as organizational capabilities.

5.2. Contributions, limitations, and conclusion

Our research contributes to open e-Government research in two ways. First, the existing view of the inclusive design of e-Government is often narrowly focused on seeking more user input (Joseph, 2018). Therefore, the literature on inclusive e-Government design, though rare, is largely inspired by greater user involvement, user-centered design, and gathering better functional requirements (Joseph, 2018; Kotamraju & van der Geest, 2012; Sánchez & Macías, 2019). Meanwhile, our analysis showed that, once triggered, inclusive e-Government design as technologies-in-practice first emerges through an interaction of systems and their social contexts but does not simply stop there. Ultimately, whether intended or not, an inclusive

design initiative, like the one analyzed here, may start by seeking design input but then evolve into an ensemble of technologies-in-practice and citizen-provider communities engaged in an ongoing stream of inclusive e-Government design work. We refer to this ensemble as a *landscape of inclusive e-Government design*. In this way, our research extends the literature by establishing that inclusive e-Government design includes distinct but integrated elements functioning as a landscape that can evolve into a fully-fledged ecosystem. Here, we draw on a biological metaphor whereby a landscape is the stage that precedes a mature ecosystem.

Second, most prior scholarly works on open e-Government have focused on uncovering mechanisms of transparent data access as a key dimension of openness (Ruijter et al., 2020a, 2020b; Ruijter et al., 2021; Ruijter, 2021). For example, Ruijter and colleagues have highlighted the critical roles of “strategic opaqueness” (Ruijter et al., 2020a), data ecosystems (Ruijter et al., 2021), and inter-organizational data governance (Ruijter, 2021) in influencing the enhanced transparent access dimensions of openness. Prior research, however, has rarely focused on untangling the mechanism for inclusion dimension of open e-Government. We address this gap by conducting a study to identify recurring and easily recognizable patterns of action that may constitute a mechanism of inclusive e-Government design. Building on our findings of a landscape for inclusive e-Government design, we then elaborated a granular mechanism through which this landscape emerges. The first component involves the two enabling social inclusion affordances of *listening* and *instant response*. The second component entails the supporting inclusion processes of *unmoderated communication*, *feedback-driven redesign*, *systemic redesign*, and *government/governance reconfiguration*. The third part consists of the emergence of certain associated organizational capabilities: *understanding the value of user input*, *maintaining inclusion formally*, and *integrating input*. Therefore, our study extends the literature on inclusive e-Government by suggesting that a *mechanism* of inclusive design can consist of the above three patterns of action.

Our work contributes to practical inclusive e-Government design in two ways. First, the practitioner community can initiate improvements to e-Government design through the highly rigorous process recommended by Mullarkey and Hevner (2019) and Romme and Meijer (2020) and employ these improvements based on the lessons of our research to improve the design of existing systems. This is an important addition to the toolbox of practitioners, since maintenance of most e-Government systems follows the traditional system development life-cycle lacking a structured approach rooted in action design research and practices of work that are far more realistic. Second, the proponents of inclusive e-Government design have to be prepared for triggering an expanding set of citizen/user expectations after such an initiative is launched. Seeking design input may be the initial goal of e-Government providers but they may face the unintended consequence of a set of inclusion affordances and processes that appear to emerge without any encouragement from the provider organizations. As such, a more proactive approach may be needed whereby the organizations recognize the bundled nature of affordances and processes that are perceived and expected by users as a holistic landscape.

Our research has limitations that can be addressed in future research. First, in general, we looked at emergent inclusive e-Government design practices regardless of differences among countries and services. In particular, we narrowed in on eleven specific e-Government services in three countries. By focusing on other services within the same country and different services across countries, as well as adding countries to the scope of the study, the results and findings may reveal other insights beyond those addressed in the current paper. Second, we focused on emerging practices of inclusive e-Government design. Research into more mature practices of inclusive e-Government design can be useful to evaluate whether mature practices differ from emergent ones and in what manner.

We conclude by highlighting that engaging in inclusive e-Government design may initially be driven by seeking design input only; subsequently, an organic landscape of inclusive e-Government design is triggered and emerges in a highly situated manner via our proposed mechanism.

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Appendix A – List of e-Government services and corresponding countries

Country	Service	Primary function of service	Frequent additional request
United Kingdom	Central Government Portal-Passports	Apply for passport	Integrated payment
	Public TV License Fees	Pay fee for public provision of TV	Lookup of past status in addition to payment
	Medical Prescription Certificates	Transmit record of fulfilled prescription	Electronic prescribing issuance and transmission
Qatar	Utility Bill Payment	Pay electric/water bill electronically	Umbrella/Multiple bill payment
	Traffic Violations and Car Fines	Pay moving and other automotive fines electronically	Additional automotive fee payments
	Health Cards Management	Apply for national healthcare card	Integrated access to hospitals and physicians
Lebanon	Trademarks Registry	Look up existing trademarks electronically	Trade register integration
	Automotive Fines Registry	Look up past fines settlement electronically	Payment integration
	Automotive Inspection	Schedule auto inspections electronically	Payment integration
	Primary ISP Subscriptions	Manage internet subscription bundles	Mobile phone 3G integration
	Value Added Tax Declaration System	Declare VAT online with the Ministry of Finance	VAT settlement integration

Appendix B – Interview questions

“Do you think getting users involved in the design of e-government service is **justified**? Why?”

“Which e-government service(s) are **worthy** of joint design with users and which are less so? Why?”

“Are there **modes** of involving users in e-government design that are established? How?”

“When engaging in joint design with users of e-government services what made the effort more **effective** (versus less so)? Why? How?”

“Using specific **instances** of engaging with users in the design of specific e-government service or feature, highlight the key aspects of **process** and **outcome**? Why? How?”

“If you were to re-engage in e-government design and/or modes of involving users what would you do differently (**lessons**)? Why? What would you do the same or more of? Why?”

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