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Practitioners' Perspectives on Inclusion and Civic Empowerment in Finnish Public Sector AI

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ABSTRACT

Algorithmic decision-making and big data systems are increasingly being used to provide innovative and essential services in the public sector. Such public services that utilize AI entail many related risks and responsibilities for citizens and public sector providers. Furthermore, the distinct regulatory demands and responsibilities of public sector services require crucial consideration of inclusiveness and civic empowerment. In this empirical study, we examine practitioners' attitudes, practices and challenges of implementing inclusive AI services in the public sector that can empower greater civic agency. We conducted in-depth interviews with ten practitioners responsible for managing, developing or designing AI-enabled public services across three big public organizations in Finland in domains relating to the municipality, taxes, and social insurance. The results show that the discussion on inclusion and civic empowerment is just in its beginning in the public sector. Practitioners perceive the concept of inclusion as devising accessible public services for all members of society. Civic empowerment was understood as 1) institutional transparency, 2) civic participation in shaping the services, and 3) easing the use of the services for their users. The research suggests two distinct socio-cultural constructs emerging among practitioners that may influence (or hinder) how civic empowerment is manifested in such services: expert cultures and risk-averse cultures. The contributions of the study are twofold. First, we describe the practitioners' perspectives on empowerment and inclusion in regard to public sector AI. Further, we recognize how expert and risk-averse cultures among practitioners explain their actions and restraints in devising public sector AI services.

CCS CONCEPTS

• **Computing methodologies** → **Artificial intelligence**; • **Human-centered computing** → **Empirical studies in HCI**.

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KEYWORDS

artificial intelligence, public sector, interview study, inclusion, civic empowerment, participation

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1 INTRODUCTION

Algorithmic decision-making and big data systems are increasingly being used to provide innovative and essential services in the public sector. A recent report documented 686 use cases of AI-based services in the public sectors among all EU Member States and several other European countries [37]. The report lists machine learning and automated reasoning as the main technologies, while service personalization, prediction and planning as the main outlets. The services typically listed are, for example, chatbots and virtual assistants, classification and search of documents, anomalies detection.

Such public services that utilize AI entail many opportunities for the public sector and citizens, such as diminishing administrative burden on public servants or helping in developing new policies [21, 37]. However, they also entail related risks and responsibilities for citizens and public sector providers [34]. Failed cases of AI-based public services have shown vital lessons for using automation in public services and the need for higher scrutiny with better practices. Outside the EU, a so-called case of "Robodebt" in Australia showed that data-driven service in the public sector with the pretence of "better management of the welfare system" [3] could have the opposite effect of instrumentalizing accounting techniques. This then could intensify inequalities by generating unlawful debt schemes affecting already vulnerable people [23]. Within Europe, a childcare benefits scandal that emerged in the Netherlands exposed how tax authorities' risk classification models, which unlawfully process "nationality" as a data point, can reinforce and exacerbate existing inequalities leading non-Dutch people to higher scrutiny by receiving a higher risk score from the algorithmic decision-making system that was used in fraud detection [14].

Furthermore, compared to other sectors, the public sector must contend with distinct conditions and challenges for the development and design of such digital services while engaging different principles and values [37]. Prior research indicates that the public sector deserves specific attention and must adapt ethical guidelines for its services accordingly [37]. For example, public services often deal with vulnerable citizens and ought to serve citizens regardless of their income or ability to pay for services (unlike in the private sector). We believe that the distinct regulatory demands and responsibilities of public sector services require crucial consideration of inclusiveness and civic empowerment.

In this work, our **research question** is as follows: what are the practitioners' attitudes, practices, and challenges related to incorporating civic empowerment and inclusion in AI-enabled services in the Finnish public sector? We examine this question by analyzing responses from ten in-depth interviews conducted with public sector practitioners. To explain some of the results, we also engage a theoretical framework related to planning culture in urban studies.

We chose to examine inclusion and civic empowerment, as they are important but less studied topics in the field of applied AI. Although there exist many guidelines and checklists discussing principles of inclusion and empowerment (eg. [11, 18]), few articles exist that examine how these principles translate to practice. Furthermore, the current research related to the use of AI in public services is mostly theoretical and lacks empirical evidence and exchange of practices [36, 37], creating a gap which we try to fill with our empirical research.

Our study is based on several concepts whose scope and definition we elaborate on below. By **practitioners**, we mean people who are actively working on devising, deploying or supporting AI-enabled services in the public sector. Hence, we defined the profile of key informants for our study as managers, strategists, data scientists, designers, and developers who are involved in AI-related projects in the public sector. The **AI-enabled services** we focus on, are the services that include the interaction between the state and the citizen, using digital services that utilize algorithmic and/or machine learning methods. This interaction can be one- or two-directional, as well as direct and indirect, i.e. chatbots offering information to systems that learn user needs over time for improved public services. These services can be directly used by citizens or exist behind-the-scenes as tools used by civil servants interacting with citizens.

We focus on the **Finnish public sector**, which is undergoing an algorithmic transformation for devising innovative digital services using responsible AI practices. In fact, Finland was the first country in the European Union to publish the governmental AI strategy[37]. The AI Watch report gathered 34 registered public AI services in Finland [37]. The work of Ruckenstain *et al.* [31] lists several AI-based services already in use such as book recommendation services in public libraries and chatbots advising maternity and child health. They also mention that new services are being planned for high-risk domains, such as immigration services and tax administration. Furthermore, government projects like the Aurora AI project have been examining the challenges of implementing innovative AI-based public services such as chatbots using machine learning for improved interactions between citizens and providers [25, 29]. Recent reports aspire Finland to create the "world's best services" [29] with the use of AI.

Furthermore, due to several factors, Finland plays a unique role compared to other countries. First, it is one of the Nordic service welfare states, due to the universal nature and importance of public services [42]. Moreover, a social democratic regime, typical for Nordics, results in the Finnish state having a stronger role in distributing the resources and Finnish citizens being granted universal benefits, regardless of their social status or needs [42]. Second, people in Finland have high trust in the public sector [32], which is valued as an important asset to maintain by the Finnish public sector [42]. Third, Finland is a technology-oriented country with a sizeable ICT sector, which supports a great deal of experimentation with digital services and AI-based technologies [19]. That makes the Finnish public sector a timely and ideal environment to conduct research on emerging practices for AI-enabled public services.

In our study, we chose to interview practitioners from three large Finnish public sector organizations: the City of Helsinki (around 38,000 employees[1]), Kela, the Social Insurance Institution of Finland (around 7,600 employees[2]) and Vero, the Finnish Tax Administration (around 5,100 employees[3]). All three of these organizations wield a lot of influence in Nordic welfare state arrangements [42]. The City of Helsinki in particular is responsible for providing a broad spectrum of public services for citizens in four main themes characterized by its divisions: 1) Education, 2) Urban Environment, 3) Social Services, Health Care and Rescue Services and 4) Culture and Leisure [4].

This paper is structured as follows. First, we introduce the relevant literature on topics of inclusion, civic empowerment, and participation in the background section. We especially focus on reviewing these principles in the field of digital services and AI. We also introduce the theory of planning culture from urban studies. Next, we explain the methodology used in the study. In the following section, we dive into the actual empirical analysis and present the practitioner's attitudes, practices and challenges relating to inclusion and civic empowerment in their AI-related projects. Next, we discuss the research outcomes and explain them using urban planning culture theory. We also present the research limitations and pose questions for future work. We conclude by providing some critical reflections in the last section.

2 BACKGROUND

Below we present the background for three concepts: inclusion, civic empowerment, and participation related to the use of AI in public services. Apart from the academic literature, we review two sets of guidelines: Ethics guidelines for trustworthy AI by the European Commission's High-Level Expert Group on AI [11] and a guide for the responsible design and implementation of AI systems in the public sector by the Alan Turing Institute [18]. We also review the currently available online sets of guidelines in three organizations we interviewed: Kela [39], City of Helsinki [26] and Vero [41]. It is important to notice that some of these organizations

[1]The City of Helsinki is the largest employer in Finland. https://www.hel.fi/helsinki/en/administration/information/helsinki-as-employer/
[2]https://fi.wikipedia.org/wiki/Kansanel%C3%A4kelaitos
[3]https://fi.wikipedia.org/wiki/Verohallinto
[4]https://www.hel.fi/en/decision-making/city-organization/divisions

are still further developing their guidelines. Lastly, we present the theory of planning culture in urban studies as a theoretical lens for our analysis.

2.1 Inclusion

In our literature review, we found a sparse body of work specifically addressing aspects regarding the inclusion of civil society in AI-based services [2, 6, 7]. Avellan *et al.* suggest that for AI to be inclusive it needs to be developed in diverse teams, use representative data, and be accessible to all [2]. The need for diverse teams is also highlighted in the works of Fernández-Aller and of Fosch-Villaronga and Poulsen [6, 7]. Two other practices suggested by these authors are: 1) informing AI system design by the social context in which they occur, and 2) following the philosophy of responsible research and innovation. The aim of the latter is to reduce the gap between society and the scientific community, by engaging various stakeholders to work together [6].

The Ethics Guidelines for Trustworthy AI [11] has several mentions of inclusion. First, they suggest that the data used to train AI models should be inclusive. Second, they include a whole section on diversity, non-discrimination, and fairness. They suggest that: "In order to achieve Trustworthy AI, we must enable inclusion and diversity throughout the entire AI system's life cycle". They also include guidelines such as the avoidance of unfair bias, accessibility and universal design, as well as stakeholder participation. Third, they encourage diverse and inclusive design teams. In the guidelines for public AI services [18], a guideline is listed to: "prioritize diversity, participation, and inclusion at all points in the design, development, and deployment processes of AI innovation."

In the guidelines of public organizations we interviewed, the notion of inclusion was not explicitly mentioned [26, 39, 41]. In this work, we define **inclusion** in AI-based services as enabling the representation of all citizens and their diverse needs throughout the whole service design process. For example, by participation in service design, data representation in the service development or accessibility and digital literacy in the service existence.

2.2 Civic Empowerment and Participation

Engaging the notion of civic empowerment in the field of technology seems to be challenging, as shown in the workshop conducted at FAccT'21 [35] and also in the work of Sankaran *et al.*[33]. Mackey and Petrucka [20] suggest that in the field of Information Systems empowerment is used for various demographics of users or stakeholders such as empowerment for women, patients, or workers, however, little attention is being brought to what this concept actually means. Kinnula *et al.* [16] present different views on empowerment: democratic, functional, mainstream, critical, and educational. In this work, we focus primarily on the first two types, which are defined as follows: 1) democratic view - "Empowerment as people's right and ability to participate in decisions affecting their lives", and 2) functional view - "Empowerment as improving people's life-conditions to serve organizational/management goals; e.g. empowering people to do their job more effectively and efficiently" [16]. In relation to the topic of AI applied to digital services, authors of another workshop described data empowerment as "the ability people have to access, produce and use data as well as the control they have over their personal data."[40]. In fact, the need for such data empowerment was found among Finnish citizens in a recent study [5].

Participation of civil society is an important element of democratic empowerment. It has been previously stated that there is a "need to introduce transparent and participatory design practices with AI use in cities globally" [19]. For citizens there are tangible benefits of acquiring knowledge to better understand society and have an influence on decision-making [22]. Yet, a recent study suggests that citizens are rarely involved in planning and piloting phases of AI-based services [36]. Furthermore, participation was also acknowledged as important in the public deliberations around so-called "smart cities" [4]. In reality, in the "participatory" development of digital services for such smart cities there is rarely any meaningful participation occurring and citizens are not encouraged to lead or set their own goals and aspirations for such services [4]. From the perspective of participatory planners in a public institution, participation serves only as a symbolic value, which is considered tokenistic participation [15, 22]. Moreover, the development of AI-enabled services is often led by technocratic, efficiency-oriented goals, rather than citizen and community-based ones [8, 30].

In the guidelines proposed by the High-Level Expert Group on AI [11] the verb "empower" is used under the principle of respect for human autonomy: "[AI systems] should be designed to augment, complement and empower human cognitive, social and cultural skills". Furthermore, stakeholder participation and social dialogue are being encouraged, where stakeholders are defined as those "who may directly or indirectly be affected by the system throughout its life cycle". Similarly, in guidelines for using AI in the public sector, one guideline mentions the need to "use AI to empower and to advance the interests and well-being of as many individuals as possible" and another encourages social dialogue and enabling participation, especially during the problem formulation and development stages [18].

By critically examining guidelines of the three Finnish public sector organizations we studied, we found that the notion of civic empowerment is only referred to in Kela's guidelines. Under the section on a Human-Centred Approach, it is proposed that: "We let our customers participate in the development of our AI solutions" [39]. In this work, we used two definitions for **civic empowerment**: 1) Democratic: giving the power to shape the services and their outcomes. 2) Functional: helping citizens in understanding their own capabilities for action and therefore outcome, eg. when they can complain about the service results, notice discrimination, use the results efficiently, etc.

2.3 Planning Culture

One of the central factors affecting urban planning and design is the context (physical, social, institutional, and cultural) in which it takes place. The effect of context on planning practices and outcomes has been studied since the 1960s but as a concept, planning culture is rather new, coined during the last two decades [24]. One of the central scholars who has developed the study of planning culture further is Othengrafen [27, 28]. His research focus is on spatial planning, but we deem that the same cultural constructions and

processes affecting physical planning in cities can be transferred to virtual domains; in other words, design and development processes of new digital public services can be interpreted through the same theoretical framework as spatial planning processes.

Within the context of planning theory, Othergrafen [28] explains culture as consisting of two distinct levels: "culture as an organising category is able to explain the 'hidden' and unconscious cultural phenomena and interpretations that are the 'essence of culture'" [12]. Culture in this perspective can also be interpreted as 'context' in which the product of behaviour is analysed and in which actions receive a meaningful correlation." In addition to being an organizing category, culture can also act as a practical tool: It can be used to explain "the invisible and taken-for-granted values and assumptions, as well as to identify how actions and behaviours are controlled or influenced by these values, meanings, and intentions."

The value of this kind of conceptualization lies in its ability to expose thinking patterns that are taken for granted but could – and sometimes should – be transformed. Nummi [24] explains, based on Othengrafen[27], that planning culture is always a dynamic process in which actors and institutions interact. It is affected by, for example, law, governmental practices, economy, technological development, values, beliefs, and attitudes. The framework can help in understanding and analyzing the choices and solutions designers and developers make. In addition to being a valuable tool for research, it can help experts themselves to recognize models of thinking, and their relationship to particular socioeconomic and sociocultural contexts [24, 27].

We engage this framework of planning culture in our analysis of how practitioners translate values, principles, and practices from physical services rendered to citizens to emerging digital and AI-enabled services in the public sectors. We believe that the social, cultural, economic, and institutional considerations and processes addressed in the discipline of urban planning are highly relevant to our analysis of public sector digital and AI-based services given the scope and implications of their impact on citizens while confronting similar kinds of conditions, challenges, and values emerging among diverse sets of stakeholders and public institutions operating in municipal and national contexts.

We also acknowledge *institutioning* [9], a related practice and a framework, defined as "a process of articulating and reflecting on these [Participatory Design and Co-Design] processes' dependencies on various institutional frames, which can, conversely, directly and/or indirectly lead to changes in a variety of institutional frames" [13]. In this work, however, we focus on the narrower scope of chosen practitioners' perspectives and and underlying models of thinking that can be dubbed as culture', rather than examining the nature of institutions. Nevertheless, this work can contribute to aspects of *institutioning*.

3 METHODOLOGY

In this section, we present the methodology for our empirical study. Firstly, we conducted semi-structured interviews with ten key informants with relevant experience and expertise related to the Finnish public sector. Next, we completed the qualitative analysis of the transcribed interviews. Lastly, we reviewed and augmented the results with practitioners during a participatory workshop. The methodology is based mostly on the work of Guion *et al.* on Conducting an In-depth Interview [10] and of Tayler-Powell and Renner on Analyzing Qualitative Data [38].

3.1 Data Collection

We planned the semi-structured theme interviews, following the work of Guion *et al.* [10]. The first two co-authors collaboratively wrote the interview questions based on the research question. The questions were reviewed with a senior qualitative researcher, after which the general structure of the interview was improved. Next, these questions were piloted with an expert participant, with prior experience working in the public sector in a data-related position. The pilot allowed us to identify points in the interview where questions were confusing and we then changed the wording of the questions accordingly. We also asked the pilot interviewee for feedback, after which we also added our definitions of the terms of civic empowerment and inclusion. Lastly, the interview questions were sent for the final review to two senior qualitative researchers, who helped improve the quality and clarity of the interview.

Each interview lasted between 60 and 90 minutes. They took place in the summer and autumn of 2022. During each of the interviews, we had two interviewers: the first leading the discussion and the second writing notes (partial verbatim and observations). The participation was voluntary and no compensation was provided. Before starting the interview, participants were presented and asked to sign the informed consent form. Five interviews were conducted in person at the interviewee's office and five were online through Zoom and the Teams tools. Interviews were voice recorded, apart from two interviewees (p8 and p9) who preferred not to have their interviews recorded. For those interviews, the two researchers took careful notes and compared these thereafter.

3.2 Study Participants

We invited practitioners from three public sector organizations and two consulting companies that collaborated with the public sector as informants for interviews conducted in our study. We decided to include private sector consultants, as those are often providing consultations and technology to digital projects in the public sector, according to our conversations with public sector representatives.

Hence, we interviewed ten people with profiles shown in table 1. Kela is the Social Insurance Institution of Finland, a government agency that provides basic economic security for everyone living in Finland. Vero is the Finnish Tax Administration, a government agency and revenue service of Finland.

3.3 Data Analysis

All the recordings were first transcribed by an external transcription services company and then pseudonymized. We use the term pseudonymize, as we make sure no names are visible, however, we retain the role and the organization of interviewees for analysis. Each interview was then coded in the Atlas.ti tool, following the protocols from Research Methods in Human-Computer Interaction [17]. We established a dozen preset codes, based on the research questions, and created new ones in the process of coding. Each

Table 1: profiles of practitioners interviewed for the study

ID	Role	Organization
p1	Service Manager	City of Helsinki
p2	Data Scientist	City of Helsinki
p3	Data Scientist	Private consultancy
p4	Development Manager	Kela
p5	Data Scientist	Kela
p6	Product Owner	Kela
p7	Design Lead	Kela
p8	Chief Analyst	Vero
p9	Data Scientist	Vero
p10	Researcher	Private consultancy

interview was separately coded by two interviewers. After the coding, researchers compared and discussed the implications of the coding.

Next, we followed a two-level analysis. In the first one, answers to research questions were grouped by the interviewee. In the second one, the answers were clustered by the key concepts. These clusters were reviewed by two co-authors of this work, to examine novelties and possible new clusters.

3.4 Participatory Workshop

The interim results of the analysis were presented back to 6 out of 10 study participants during a participatory workshop. The rest of the participants were not able to join on the suggested dates. During the workshop, participants were encouraged to share their comments on the results, for example, when they hadn't agreed with something. At the end of the workshop, they were asked to share their comments on the results, therein what was missing, or what was surprising for them. We also asked which challenge in their opinion is the most urgent or difficult for them to overcome.

Several co-authors conducting the research also participated in this workshop. While one researcher presented the results and facilitated the discussion, another wrote notes (partial verbatim) and a third conducted observations. Participation in the workshop was voluntary and no compensation was offered to participants.

4 RESEARCH OUTCOMES

In each interview, we started with talking about the overarching topic of **trustworthiness**. Interviewees referred to it as a must, without which AI-enabled services are of no use. Many of them admitted that trust is being widely discussed in their organizations. Trust and trustworthiness were being used interchangeably, without clear distinction. Most often, they connected trustworthiness with reliability ("as a user, you can trust that the system works the way it is supposed to and produces results that it's supposed to" (p10)) and with transparency ("I relate the transparency pretty much with the trust. They go together." (p6), "only way to maintain the trust from the citizens towards us is that we have to be open and things have to be transparent." (p1)). They also related trustworthiness to the trust of citizens in the organization. Interviewee 8 said, that in practice if people are able to trust the organization, that translates into trust for the solution.

4.1 Inclusion

Below we present outcomes emerging from the practitioner interviews. The notation of (p#) after each quote indicates the practitioner who mentioned it. First, the notion of inclusion brought mixed responses among practitioners. A few practitioners from Kela were positive about how their organization is inclusive: "I think Kela is a pretty good example of an organization who considers different kinds of people in their services." (p6) For other practitioners, inclusion turned out to be a confusing and difficult-to-explain topic. They mentioned that the word is positive, but also presents a complexity, when they need to effectively include a large population of citizen (and non-citizen) recipients to make equitable and accessible services as a public institution.

> "I find that it's really important, but also really really difficult [...] in Kela we have all the citizens of Finland as our customers, so we have to really make sure that our services can be used by all the citizens." (p4)

When asked for a definition, practitioners mostly referred to accessibility, that is making sure that services are simple to use for diverse citizen groups, such as the elderly or people with poor vision. They also emphasized that inclusive services should be developed for everyone who will use the services and with consideration of everyone who will be impacted by it.

Practitioners mentioned that for effectively supporting inclusion they must address challenges of exclusion on four different axes: digital, linguistic, cultural, and geographical. Linguistic exclusion in particular was mentioned by the majority of the interviewees: "At the moment our customer service is in Finnish, Swedish, in Sami language, and in English. Those are probably the next languages that we are going to train our bot, but then of course there's always the question of how many Sami-speaking customers we actually have and whether it is cost-effective to train the chatbot in the Sami language or not."[5] (p4).

Another related challenge mentioned was about lack of staff diversity inside the organizations. The staff's native language, seniority, and gender were mostly mentioned as non-diverse-enough factors. Interviewee 5 told:

> "There's also a discussion on the EU level that the development group that you're using or developing AI systems should be heterogenous to ensure that different viewpoints are considered. And I think currently many Finnish organizations are quite homogenous in their demographics." (p5)

Furthermore, practitioners mentioned bias and lack of representative data as a challenge. For example, some services used to be accessed mostly by a specific group of citizens and it is difficult to develop these services for other groups. One practitioner also shared how some data might be problematic due to the internalized biases of those collecting data.

Lastly, one practitioner shared their view that discussions on AI ethics are often not inclusive due to the technical language used and not involving a broader group of people:

[5] Finnish, Swedish and Sami are official languages of Finland, while English is a common 'lingua franca'.

> "the way [the AI ethics terms] are used and defined is sort of technical, and they are limiting a lot of discussion that we need to have in order to develop better AI systems, better for everybody, not just a small section of people. And in order to do that... we need to find a level where we can talk about these things in the way that more people can participate in the discussion, and that's what I mean by inclusion in this context." (p10)

Interviewed practitioners mentioned a few different practices for improving inclusion in AI-based services. Firstly, ensuring the accessibility of websites according to European directives and simplicity of language, for example: "on the chatbot side, it's really important for us that the language that the chatbot uses is simple enough for our customers to understand, so there cannot be any legal text or too difficult sentences" (p4). Secondly, rising awareness about inclusion internally. One practitioner mentioned: "If you follow our intranet, there's a lot of talk about equality and inclusivity and equity there. I think it's something that's being discussed openly all the time" (p7). Another practitioner talked about employees whose role is to raise the topic of inclusion to the civil servants in Vero (the Finnish tax authority) through training.

Thirdly, practitioners suggested that AI can actually help in inclusion, by providing tools like speech-to-text, text-to-speech, or automatic translation. One practitioner added that AI can increase inclusion with proactive services, so people can reach what they need with fewer skills to learn. They mentioned, that it would give every citizen rights to services they need and ensure that everybody is included. Fourthly, as an answer to the issue of data bias, it was suggested that cases with an under-representation of data, can be handled by a human, instead of AI. Alternatively, techniques such as majority undersampling or minority oversampling were suggested. Lastly, the practice of segmentation was described. This practice involves establishing segments of customers, understanding their specific needs and developing designated services for them.

4.2 Civic Empowerment

Civic empowerment was a difficult topic for most practitioners. A few of those interviewed started their answers with "I don't know" or with long pauses. They also shared doubts about whether empowerment was happening in their own organizations. One practitioner shared the observation that sometimes the services are being designed and developed without input from civil society, on the premise that developers and designers are experts and they know what end users would need. Another practitioner said:

> "We are planning to ask people's views or opinions on the ethical principles, although I don't yet know how much those views will impact the actual principles."[6] (p2)

Asked about how they define empowerment, practitioners mentioned three factors: 1) institutional transparency, 2) democratic empowerment (agency and participation), and 3) functional empowerment.

Talking about **institutional transparency**, they felt that citizens have to know about services before and after they are created. One practitioner said that transparency can enable civil society to participate in the ongoing discussions around the state of current AI services, and hence empower people. While most practitioners were positive about being open about the public services, they often mentioned that not everyone in their organizations is also encouraged to be transparent. For example, one participant mentioned how managers are eager to share news about perfected services on social media, while being opaque about more complex or controversial ones. Another one said:

> "Not everyone is super eager to share their solutions here, and the city has strategic goals related to AI, like that all data that the city produces should be available to other divisions also and reusable, and the whole city organization should basically be able to make use of the data and systems of other divisions. And not everyone is on board with that kind of transparency." (p2)

As a reason for this reluctance towards being transparent, practitioners mentioned a fear of sharing something that is not completed or perfected. One practitioner referred to it as being naked in front of citizens. They were afraid of criticism and, hence, losing citizens' trust, e.g. "I suppose the difficulty is of getting negative discussions and press if they're transparent too early before a thing is finalized." (p7).

Two practices of institutional transparency worth-mentioning are emerging in the City of Helsinki. In 2012 they started Helsinki Region Infoshare (HRI)[7], where they have been openly sharing public datasets, mostly related to maps and traffic. One practitioner mentioned how HRI was a place where they had practiced openness and transparency and had learned what transparency means. Now, the City of Helsinki is openly sharing information about AI services used in the city in the AI Register [8]. One practitioner from the City of Helsinki mentioned that they want to share with citizens what new technologies they are using, so citizens can understand and trust them.

A similar approach to transparency is being planned in Vero. While in Kela, transparency about services seems to happen much more through different types of media, such as Instagram, Medium, or podcasts: "what we try to do, we write about the work in blogs and there are people doing podcasts" (p7). In fact, such openness helped in establishing worthwhile contacts with civil society organizations for one of Kela's experiments.

One practitioner mentioned some reasons for being open about planned projects in their organization:

> "I suppose putting those issues out there for discussion and trying to understand what people think about them. Especially for us in doing the experimental work, it's very important that we be aware of the sentiments and discussion around those solutions early on. " (p7)

As for **functional empowerment**, practitioners mentioned actions that support citizens in making their daily tasks easier

[6]Upon reviewing the quotations for this work, the interviewee 2 shared with us that in fact the principles were influenced by the input they received in the participatory process with e.g. citizens.

[7]https://hri.fi/en_gb/

[8]https://ai.hel.fi/en/ai-register/

and faster than they used to be. For example, they might be given instructions on what they should do next or what to apply for. One practitioner mentioned that empowering means being better than the previous way of doing things. As an example he gave a service that would be usable any time of day, so you do not need to wait for using it.

Regarding **democratic empowerment**, practitioners understood giving more agency to citizens and including them in the service development process. They shared examples such as making an impact on the service, reducing the use of AI in their case or filing a complaint. Interviewee 10 described agency as: "I suppose, more power. More power to influence, more power to have an impact on things that matter to them" (p10). One interviewee said:

> "First, that people have been involved and you can show that this was developed with the people, for the people, and they've been closely involved in the development process. It has to be something, when it's in place, that people feel that they are in the driver's seat. I don't know, how that works, but that should be the feeling you get" (p7)

The biggest challenge relating to empowerment was how to engage citizens. Interviewee 1 mentioned that it is difficult to involve citizens in the development process, which is so specific to AI. They also worried about the lack of incentive for citizens to participate and about always seeing the same people when some participatory event was organized. Another practitioner estimated participation itself as easy but saw the organization's reluctance as a challenge.

Practitioners interviewed also listed a few practices relating to citizen engagement, despite seeing it as challenging. In the City of Helsinki, they use their in-house participatory models and they plan a discussion between the AI and the participation team. In Kela, they reached out via their own social media pages (LinkedIn, Instagram) and internet forums to discuss the new service idea with 20-30 participants. One practitioner mentioned that: "at least in our innovation unit, we never do anything without users, and trying to talk to them and interview them, test things out very early on and trying to discover whether we are at all on the right track." (p7) The practitioners also mentioned when to engage with citizens and why:

> "The early development phase, where you come up with the ideas and solutions and try to understand what would be the solution that works, that part, they should be involved. And then, once that is implemented, and in use, they feel empowered, and then they have the agency to change that." (p7)

Last, but not least, one practitioner also suggested a way to engage with citizens and why it should be conducted in this manner:

> "would it make sense to build mechanisms, where people and experts are talking with each other about values that this system should reflect. [...] I think that would be a way to engage people who do not have a technical background in that same discussion about how we want these AI systems to work and behave, and what kinds of things we don't want them to do in a specific context. [...] I think that also there you could really use different concepts instead of [what] ethics of AI uses. You wouldn't even need to talk about transparency and things like that. You could talk about equity or fairness and things like that and how people, what does it specifically mean in this context [...]. So, I think it would be more inclusive in that way. It might also make people trust these systems more, if they can have some kind of role." (p10)

4.3 Participatory Workshop Outcomes

Here we discuss the outcomes of the workshop conducted with practitioners (mentioned here as participants), whereby they responded to our interim analysis of their interview outcomes. During the presentation of the results, there was a moment when participant 7 did not agree with our statement regarding the challenges of having citizens participate in projects. For them, there was no challenge in co-designing or engaging citizens. As a designer, he sees it as always necessary to validate solutions with end users.

After the workshop, participants could answer several questions. The first was about how much the topics of empowerment and inclusion are discussed within their organizations. Participant 8 emphasized the big role of law in their discussions. Participant 9 shared their observation, that not a lot of people inside the organization discuss these topics and that in their opinion it should be a broader discussion. Furthermore, they admitted that inclusion and empowerment are not at the top of the list of things for discussion in their organization. Participant 2 said that the City of Helsinki has rules and processes that concern these topics, although they may use different terminologies. Participants 4 and 7 mentioned that in Kela it seems that the same people are always involved in these discussions. Also, the notion of inclusion is only now being discussed, while empowerment is less talked about.

When asked about what surprised them about the results, participant 9 shared their astonishment at how AI affects the whole society, yet it is not discussed as much. They thought that as an organization they should do more thought exercises on how the future would look with more AI-based solutions emerging. Participant 4 pondered what citizens expect from the public sector and whether there is an expectation of being better informed about their rights.

Next, they were asked about which challenges they think are most important to work on. Participant 4 suggested collaborating further on the topics of inclusion and empowerment. Participant 9 discussed how to communicate about their projects so that it does not raise concerns from the public. Participant 7 suggested working on better defining the term Artificial Intelligence and how it's used in their context, to make communication about AI-enabled services to citizens easier. They also mentioned that it would be good to collaborate across organizations around the topic of the participation of citizens. Lastly, participant 2 mentioned that the biggest challenge is to create AI-enabled services in the first place, for example on how to use citizen data and be legally compliant. He added that they have just created ethical principles, but they don't have any processes related to how to use them yet.

5 REFLECTIONS ON RESEARCH OUTCOMES

5.1 Inclusion

Inclusion was understood by practitioners we interviewed mostly as accessibility and services for all. In the interviews, there was little discussion on ensuring inclusion throughout the whole service lifecycle, which on the contrary was highlighted in the studied literature and in our definition. However, other parts relating to our definitions were mentioned as challenges or practices, such as data representation or digital exclusion caused by the lack of digital literacy.

Comparing organizations' practices for inclusion with the ones mentioned in the work on inclusive AI of Avellan *et al.* [2] we see that most of them overlap. On the users' side, organizations are working on the accessibility of their services. They are also acknowledging the possibility of targeting the services to specific groups of users that might require additional support. Regarding use of data for training AI models, the problems of bias and not having representative enough data were mentioned, however, few related practices were described.

Furthermore, the need for diverse teams was broadly mentioned in the studied literature and among our interviewees. Indeed, based on our data, this seems to be the biggest issue for inclusion in the public sector in Finland. To be truly inclusive, public sector organizations would need to work on increasing the diversity of their workforce [1]. As the work of Ashikali *et al.* [1] says, public sectors need to additionally invest in inclusive leadership. This, however, is partially covered by the practices of raising the topic of inclusion among employers in the interviewed organizations, mentioned by our interviewees.

Interestingly, despite many challenges and practices for inclusion being mentioned during the discussion, they do not appear in the current state of organizations' guidelines. The words "inclusion", "bias", or "diversity" were not found there. Possibly the closest mention is in Kela guidelines, which cites participation of civil society actors in the development of services. On the other hand, the principle of inclusion in AI is partially covered by existing regulations for the public sector.

5.2 Civic Empowerment

Civic empowerment was a difficult concept to define for most practitioners we interviewed. This should not be a surprise, as it is still a new and challenging concept in the field of technology and AI [33, 35]. Practitioners defined civic empowerment in three ways: 1) institutional transparency, 2) functional and 3) democratic, which corresponds partially to our definition. Institutional transparency was the unexpected addition that seems to be very important for our interviewees. They saw it as something that can empower citizens and let them discuss the services before they are developed. Such discussions can offer important feedback for public sector practitioners. The City of Helsinki introduced a good example of how they have done that, by establishing the Helsinki Region Infoshare online system and opening it up for citizens' feedback.

As for democratic empowerment, participation was seen mostly as a challenging task for several reasons. Practitioners mentioned that the main challenges were how to reach citizens and incentivize their participation. Perhaps, only for a designer we interviewed, participation was seen as an easy task that flows naturally with the design process. That suggests how important it is to have designers in the AI innovation teams. The question, however, appears to what extent the participation described by our interviewees is truly democratic in nature, and to what extent it can be considered a form of tokenism [4]. In other words, how it can actually empower citizens to influence the services developed in the public sector.

5.3 Expert and Risk-Averse Cultures

To explain the conditions affecting our practitioner's perspectives we draw on the theory of urban planning and apply the concept of *planning culture* to our analysis.

Based on our research, and using the theoretical lens of planning cultures to frame our findings, we recognize two broad sociocultural constructs that informed the thinking of practitioners we interviewed: namely *expert cultures* and *risk-averse cultures*. Expert cultures refer to thinking models that emphasize the expertise of the AI practitioners in contrast to people impacted by the use of AI-enabled services. While most practitioners we interviewed were positive about the need for citizen engagement in their work, they had doubts about how useful it would be and whether their entire organization was encouraged to support effective citizen participation. Hence, expert cultures embedded in institutions do not readily support participatory practices as the views and perspectives of the citizens are not well understood or prioritized in the context of developing AI-based services.

On the other hand, we also found a phenomenon we call risk-averse culture. It refers to the practice of avoiding sharing information about new or planned services because of reputational fears and losing the trust of citizens. As trust in public institutions is generally exceptionally high in Finland among most citizens, there are understandably high stakes involved in having public sector organizations introduce AI-enabled services. In fact, the confidence in public sector organizations is what makes Finland strong [32] and no other EU country ranks higher in the level of citizen trust than Finland [25]. Although practitioners in these organizations have good intentions and values that emphasize social good, this risk-averse culture unwittingly stands in opposition to the goals of inclusion, civic empowerment and participation of citizens, as they are not easily engaged in the dialogues and design of innovative services that may impact their lives.

It must be highlighted that these expert and risk-averse cultures in public sector organizations in Finland appear to be undergoing changes, as institutions embrace more inclusive and participatory ethos in their approach with citizens. During the process of writing the outcomes of this research, one of the practitioners' doubts about whether citizen participation can influence their work was positively resolved. The fact that these practitioners and organizations were eager to participate in our research project and interviews regarding issues of inclusion and civic empowerment is a good indicator of their eagerness to engage in these topics and reflect on how to change their own institutional practices and cultures.

5.4 Limitations of Research and Future Work

The concepts of inclusion, civic empowerment and participation that we have highlighted in this paper do not intend to explain all

the results of our analysis, but reflect a few broader socio-cultural constructs and patterns of thinking among practitioners we interviewed that were visible throughout different themes emerging in the research. There are many limitations to conducting such a qualitative research study with practitioners in the public sector, and these preliminary concepts and constructs may not be widely representative; hence more extensive research is needed. However, we believe our research offers some initial insights and implications for future research on the design of public sector AI services.

The key limitation is around the generalizability of the research given its scope and methods used. We interviewed ten practitioners from three big public sector institutions in Finland. While we selected expert practitioners across many disciplines and domains of impact in these organizations, it's unlikely that their perspectives represent a broad consensus of organizational' attitudes, challenges and practices regarding inclusion and empowerment in AI-enabled services, however they offer a crucial lens worthy of further examination. These results may also not be generalizable to other kinds of public sector institutions in Finland or elsewhere due to their distinct institutional values and cultures.

Another limitation is related to the challenges of gaining sufficient insights on these concepts and constructs using the qualitative methods used in this research (primarily in-depth interviews and workshops). To improve the reliability of interpreting qualitative data from the interviews and workshops, two researchers were involved in the process of data coding and analysis. The interview outcomes were further discussed with practitioners through a participatory workshop to validate and expand on the findings.

This research can be expanded in many ways to deepen the insights and implications. First, an online survey with a larger number of public sector practitioners can be conducted to validate some of the initial findings. That would enable us to quantitatively learn how widely the practices and challenges mentioned in our practitioner interviews are occurring within and across public sector organizations in Finland and elsewhere and what kinds of values and attitudes are the most prevalent.

Second, an ethnographic study within one or more organizations we interfaced with can yield much more in-depth qualitative findings on the cultural context and everyday practices of practitioners. It would help us learn more in detail about the values, attitudes, and challenges practitioners experience in engaging aspects of inclusion and civic empowerment in their work practices. For example, one could examine how often and in what form these concepts and principles emerge in practitioners' everyday practices and in what social and work-related domains.

Lastly, one could distinctly investigate the ways in which citizens inform or participate in the design or development of digital or AI-enabled services in the public sector. This kind of ethnographic inquiry of both practitioners and citizen engagement could offer a better understanding of how institutional cultures inhibit or promote aspects of inclusion, civic empowerment and participation. It would also allow us to propose and potentially pilot new approaches for conducting critical engagement and participatory design with a wider range of stakeholders within and outside of the public sector organizations for devising more innovative, responsible and inclusive AI-enabled services.

6 CONCLUSIONS

In this research we examined practitioners' attitudes, practices, and challenges related to inclusion, civic empowerment and participation in the development and design of AI-enabled services in the Finnish public sector. The research undertook a qualitative approach, conducting ten expert interviews with practitioners from three different Finnish public sector organizations: the City of Helsinki, the Social Insurance Institution of Finland (Kela), and the Finnish Tax Administration (Vero), along with participatory workshops to validate and expand on our findings.

Inclusion of civil society in AI-enabled services raised mostly positive responses, however the complexity of including a wide range of users or recipients of such public sector services was highlighted. The notion of inclusion was defined mostly to focus on aspects of accessibility and offering services for all. Making sure that services are accessible at the user experience level and linguistically was the most mentioned practice, rather than broader aspects of its design and impact. Practitioners cited the lack of staff diversity and linguistic exclusion as the main challenges for better inclusion of citizens in such services.

Civic empowerment was a difficult concept to define for our interviewees. In the end, they referred to three definitions: 1) institutional transparency i.e. public sector's openness about planned and developed services, 2) functional i.e. making the services more functional for citizens, and 3) democratic, i.e. civic agency and participation. Participation of civil society in design of AI-enabled services was mentioned both as a challenge and a practice. The notion of empowerment for citizens was seen as ensuring their participation in the service design and development process, as well as providing feedback on existing services or data.

Furthermore, from our research we recognized two distinct socio-cultural constructs and broad patterns of thinking among the practitioners we interviewed that may hinder civic empowerment: expert and risk-averse cultures. The former underestimates the importance of citizens' knowledge in developing public services, while the latter minimizes institutional transparency due to reputational fears and the risk of affecting the citizens' trust in public institutions.

The contribution of this research is twofold. First, we have examined practitioners' attitudes, practices and challenges for engaging with concepts of inclusion, civic empowerment and participation with regards to design of AI-enabled services in the public sector. Second, we examined the implications of expert cultures and risk-aversion as socio-cultural constructs that influence practitioners' attitudes and actions in such institutional settings. We believe that by expanding on our preliminary research outcomes, participatory approach, and future work with practitioners, citizens, and other stakeholders this work can offer crucial insights and contribute to how suitable practices can be devised in different institutional contexts for more inclusive and empowering design of AI-enabled services in the public sector.

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