Government Information Quarterly 41 (2024) 101956

Contents lists available at ScienceDirect

Government Information Quarterly

journal homepage: www.elsevier.com/locate/govinf

When public values and user-centricity in e-government collide – A systematic review

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ARTICLE INFO

Keywords:
User-centricity
Citizen-centricity
Public values
E-government
Literature review

ABSTRACT

User-centricity in e-government is a double-edged sword. While it helps governments design digital services tailored to the needs of citizens, it may also increase the burden on users and deepen the digital divide. From an institutional perspective, these fundamental conflicts are inevitable. To better understand the role and effect of user-centricity in e-government, this paper analyses academic literature on user-centricity and public values. The analysis leads to three main insights: First, there is a conflict in citizen representation that may result from the normative dominance of decision-makers. Second, we identify an accountability conflict that can prevent user-centric innovation from thriving in a highly institutionalized environment. Third, we identify a pluralism conflict that emerges from a clash between the reality of a diverse society and the assumed homogeneity of actors. The need to address these conflicts increases with rapid technological innovation, such as distributed ledger technologies, artificial intelligence, and trust infrastructures. These technologies put the user at the center stage and permeate aspects of social life beyond government. In response to these insights, we outline suggestions for further research and practice.

1. Introduction

Public administrations worldwide embrace citizen-centricity as a key component of their organizational strategy (OECD & Asian Development Bank, 2019; Vesnic-Alujevic, Stoermer, Rudkin, Scapolo, & Kimbell, 2019). This new strategy also reflects governments' eagerness to explore new technologies that may help improve public services (Dwivedi, Williams, Mitra, Niranjan, & Weerakkody, 2011) and better incorporate the needs of citizens as users (Codagnone, Misuraca, Gineikyte, & Barcevicius, 2020; Sevaldson, 2018; Zavolokina, Sprenkamp, & Schenk, 2023). In e-government, the new focus on citizens as users has evolved into 'user-centricity'. This construct encompasses the involvement and participation of users in the *design* of digital public services applications – also referred to as *co-design* – and the adaption of digital systems to users' preferences at the *implementation* stage.

Despite their goal to improve the delivery of public services, some user-centric implementations assume an ambitious level of digital skills that not all users possess. A lack of these skills and relevant knowledge of underlying public procedures could, for instance, exclude citizens from the co-creation of digital public services in collaborative design approaches. The resulting intention-reality gap creates tensions that materialize in the so-called digital divide, i.e., a state in which significant portions of the population either lack the necessary digital skills or access to otherwise available technology (Robinson, Dimaggio, & Hargittai, 2003). Governments focused on user-centricity for their delivery of public services risk oppressing these already marginalized groups further by assuming a common level of digital skills and not accounting for socio-economic differences. At the same time, the implementation of user-centricity can be a powerful tool to empower citizens and better reflect their needs (Weigl, Amard, Marxen, Roth, & Zavolokina, 2022).

However, putting citizens' needs and expectations center stage is difficult and requires a holistic approach beyond mere revision of government processes. User-centric e-government affects the foundation of public service delivery and necessitates a careful balance between values

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https://doi.org/10.1016/j.giq.2024.101956
Received 19 May 2023; Received in revised form 12 March 2024; Accepted 22 June 2024
Available online 28 June 2024

introduced by user-centricity and established public values. We define public value(s) in line with Moore (1995), who posits that the 'public value' encapsulates the shared expectations of citizens regarding government and public services. He argues that public organizations pursue public value to effectively address public needs. A common ground for all public value frames is that public values are often ambiguous, hybrid, contrasting, and overlapping (Stoker, 2006). That is, the support and fulfillment of values introduced or championed by user-centricity may clash with established public value frames. Resulting value conflicts are clear signs of value pluralism and require careful management of user-centric implementations (van der Wal & van Hout, 2009). Weigl et al. (2022), for instance, find that user-centricity is strongly aligned with values such as efficiency, innovation, transparency, or accountability to the public.

While these values reflect government institutions' general pursuit of legitimacy, reputation, and a democratic ethos, they introduce economic rationality, which is not typically at the core of public organizing (Mignerat & Rivard, 2015; Wiredu, 2012). To anticipate conflicts and best leverage the possibilities introduced by user-centricity, governments need to deepen their understanding of *how* user-centricity may align and conflict with established public values, and *what* causes these conflicts. Current studies either focus on general public value conflicts or the design of different approaches to user-centric digital services in e-government. Only few studies explore value conflicts between user-centric and public values in a digital government context (Weigl et al., 2022). The existing fragmented literature and often contradictory research results also do not elaborate on how potentially conflicting values can be reconciled in user-centric designs, projects, and initiatives. The consequences and sources of such value conflicts for e-government services are yet to be systematically analyzed (Ingrams, 2019).

Given the relevance of user-centric applications in e-government and the advancement of relevant technologies to facilitate such applications, the needs of service providers and recipients should be better integrated into user-centric designs. The resulting reconciliation of user-centricity with public values may support more inclusive services and inform the development of technologies for social good. Efforts to integrate user-centricity into public value frames include the identification of conflict areas and, most importantly, their sources. These efforts are relevant to avoid deviations from core public values post-implementation, which can carry an elevated risk of exacerbating societal disparities, eroding trust in governance, and compromising privacy. Moreover, without identifying the sources of conflicts between user-centricity and public values, those conflicts will be difficult to tackle or reduce.

Thus, our study aims to provide a systematic overview of the *status quo* on interactions between user-centricity and established public values. We identify value conflicts and their sources based on an abductive analysis of our data. These serve as the foundation for recommendations to support the integration of user-centric digital services with public values. We also outline future research directions at the intersection of public value theory and user-centricity in IS and digital government. Since our study intends to deliver a systematic overview and actionable recommendations on how emerging user-centric technologies across many levels of social organizing, such as digital identities and artificial intelligence (Ølnes, Ubacht, & Janssen, 2017), can be best integrated, we ask the following research questions:

RQ1. What value conflicts emerge in user-centric approaches to e-government?

RQ2. Why do these value conflicts between user-centric values and public values emerge?

To address these research questions, we first conduct a systematic literature review to synthesize literature in IS, management studies, and public administration. The synthesis helps us understand the interplay between user-centric and public values as well as emerging value conflicts. Based on abductive analyses, we explore underlying conflict sources, i.e., emerging or contextual factors that influence or exacerbate value conflicts. Second, we outline opportunities for further research to address the identified conflicts and assist the implementation of future user-centric government-to-citizen initiatives. Our study may also serve as a roadmap for user-centric approaches with new technological applications in e-government.

The remainder of the paper is structured as follows. The second section discusses the concepts of user-centricity and public policy, public values for e-government, and conflict literature. The third section outlines the research approach including literature identification, selection, relevance, quality assessment, data extraction and data analysis. The fourth section provides an overview of our findings. It describes the conflicts identified in our systematic literature review and integrates an analysis of their underlying sources. The fifth section discusses the research contributions and proposes areas for future research. The paper ends with a summary of our key findings, the paper's limitations, and an outline of future research directions.

2. Background

2.1. User-centricity and public policy

With the advent of digital transformation efforts at different governmental levels and the introduction of new technologies to improve public services, such as data analytics, AI, or novel identity management applications (Bhargav-Spantzel, Camenisch, Gross, & Sommer, 2006; Niglia & Tangi, 2024), user-centricity has become a primary goal for policy-makers (European Commission, 2023; OECD, 2009). While user-centric approaches were initially limited to human-computer interaction research in the 1980s, they have gained more widespread attention with the rise of software development projects. User-centric approaches commonly focus on user needs, expectations and preferences (Jarke, 2021; Kurdi, Li, & Al-Raweshidy, 2010). They also resonate well with software designers' X-centered designs, such as healthcare with patient-centered design (Morales Rodriguez, Casper, & Brennan, 2007), workplace with employee-centered design (Spurlock & O'Neil, 2009), or public administration with citizen-centric design (van Velsen, van der Geest, ter Hedde, & Derks, 2009a). Policy-makers and practitioners seized the advancement of user-centricity by developing national and international policies. For example, international organizations such as the OECD directly link user-centric digital public services to citizen well-being (Welby, 2019) and propose tailored guidance for the public (OECD, 2009). Extensive funding up to hundreds of millions of dollars[1] for projects targeting user-centricity further pushes these approaches. Many countries successfully embedded user-centricity in their service design, such as the U.S.A. (U. S. General Services Administration, 2023) and the U.K. (Government Digital Service, 2023). Some governments either directly support service designers aiming for user-centric designs or propose dedicated training (Government Digital Service, 2020). It is particularly relevant that service designers understand the importance of development and evaluation phases to achieve user-centric outcomes. IT develops rapidly, expecting citizens to catch up quickly. This is only possible when service designers can reflect different levels of digital skills and heterogenous needs in their applications to, for instance, accommodate an aging population (Lee, 2022).

The new focus on citizens as users may also affect policy-makers who need to consider the influences of user-centricity on policy-making and vice versa (Othman, Razali, & Nasrudin, 2020). Current considerations of this relationship have primarily focused on systems development. In this context, user-centricity appears as a multidimensional concept composed of four pillars (Iivari & Iivari, 2011): (1) user-centricity as user focus, (2) user-centricity as work-centeredness, (3) user-centricity as user involvement, and (4) user-centricity as system personalization.

[1] See, for instance, the projects listed on the website of the World Bank: https://projects.worldbank.org/en/projects-operations/project-detail/P168425

Each of these four pillars provides a different, albeit complementary, dimension to the concept. First, user focus addresses users' needs based on their activities or tasks and characteristics (such as skills or personal preferences). Second, work-centeredness provides insights into users' work activities, context, and dominant work practices. Third, user involvement reflects the importance and relevance users attach to a given system. Iivari and Iivari (2011) additionally distinguish between user involvement and user participation. The latter is a type of user involvement, in which users actively participate in the design process. Fourth, system personalization reflects the adaptability or adaptivity of the system's content structure, presentation, and functionalities to individual preferences or behaviors.

User-centric values steer how governments manage and integrate digital technologies into processes and interactions with citizens. However, the reconciliation between user-centric values in e-government and established public values has not been well-researched. Current work is focused on the benefits of user-centricity and primarily explores adoption mechanisms to overcome the challenges of e-government (Al-Hujran, Al-Debei, Chatfield, & Migdadu, 2015; Alzahrani, Al-Karaghouli, & Weerakkody, 2017; Rana, Williams, Dwivedi, & Williams, 2012; van Velsen et al., 2009a; Van Velsen, Van der Geest, Klaassen, & Steehouder, 2008), presenting user-centricity as a panacea. In practice, however, the proposed panacea has neither mitigated implementation struggles nor improved the acceptance of digital technologies in public administration.

The origin of user-centric approaches may explain their limited effect in practice. User-centricity is rooted in market-oriented principles, such as customer-centric relationships, and does not necessarily focus on users' 'true needs'. Instead, user-centricity considers, for instance, profit-maximizing strategies. This casts doubt on its representation of citizens' multifaceted needs and expectations and its contribution to social good in e-government contexts.

2.2. Public values for e-government

Maintaining or improving services and policies of system designs during digital transformation reflects the "inherently democratic mission [of public administration that] rely on support from citizens and institutions of government for their viability" (Ventriss, Perry, Nabatchi, Milward, & Johnston, 2019, p. 276). However, this mission is not necessarily reflected in the efficiency- and effectiveness-maximization principles of IS implementation (Mignerat & Rivard, 2015).

IS research typically adopts a rational perspective and considers managers as efficiency-seeking decision-makers, whose choices are based on cost-benefit analyses (Avgerou, 2000; Teo, Wei, & Benbasat, 2003; Tingling & Parent, 2002). Going beyond the ideal of a homo economicus in public administration (Avgerou, 2000; Orlikowski & Barley, 2001; Teo et al., 2003), would require actors to endorse public values as they seek legitimacy over efficiency (Jansen & Tranvik, 2011; Mignerat & Rivard, 2015). According to institutional theory, legitimacy is crucial for government actors to 'survive' long-term, that is, retain the support of their voters and be re-elected (Meyer & Rowan, 1977; Mignerat & Rivard, 2015).

Despite the clear focus on legitimacy in public administration, public management systems have changed over time and not all systems intrinsically prioritize 'public sector ethos' (Stoker, 2006). Traditional public administration, for instance, follows Weberian principles that position bureaucratic oversight as a central element to satisfying citizens' demands on the state (ibid.). The New Public Management (NPM) approach portrays citizens as 'customers' and heavily draws on private sector management models and market-based mechanisms (Ferlie, Ashburner, & Fitzgerald, 1996; Hood, 1995; Pollitt & Bouckaert, 2017). To achieve a more user-centric focus, Digital Era Governance (DEG) emerged as an attempt to re-aggregate public services around users' needs (Dunleavy, 2005). At the same time, the public value management paradigm (Stoker, 2006) highlights strategic objectives, such as enhancing efficiency in public services, ensuring equality, social inclusion, transparency, and upholding accountability (Cordella & Bonina, 2012; Moore, 1995). While these models and paradigms already try to anticipate values introduced by information technologies (IT), the complex relationship between ICT and citizen-centered governance warrants further analyses.

Bannister and Connolly (2014) have explored this intricate relationship by developing a typology of how technology implementation impacts a range of public values (Table 1). They refer to public values as "a mode of behavior [or] a way of doing things […] that is held to be right […] by the public, citizens or the so-called 'reasonable man'" (Bannister & Connolly, 2014, p. 120). This definition builds on 'public value' within the public value management paradigm and describes the shared expectations of citizens for government and public services (Moore, 1995). In their typology, Bannister and Connolly (2014) also identify several public values and categorize them into three domains: duty-oriented, service-oriented, and socially oriented. Duty-oriented values describe values related to the duties of the civil servant vis-à-vis the government. Service-oriented values reflect the responsibility of the civil servant to provide high-quality service to citizens as customers of public administration. Socially oriented values exhibit a broader set of social goods. The resulting typology can be mapped with other syntheses of public values in e-government. For instance, Rose, Persson, Heeager, and Irani (2015) highlight the ideals of professionalism, efficiency, service, and engagement. The ideal of professionalism builds on traditional bureaucratic values, also called 'foundational values' (Dobel, 2007), which are firmly established in democratic Western countries. Values of the professionalism ideal combine Bannister et al.'s (2014) socially and duty-oriented values. The efficiency ideal (Rose et al., 2015) draws on private sector management practice and shares similarities with industry-oriented and entrepreneurial governance approaches, such as NPM. It aims to encourage responsible spending of public resources and aligns with Bannister et al.'s (2014) service-oriented values. The service ideal follows a similar goal but takes a less market-oriented approach. Instead, it focuses on improving government services for citizens. Finally, the engagement ideal, which builds on Bannister et al.'s (2014) socially oriented values, highlights the involvement of citizens to strengthen a democratic approach to policy development.

Bannister et al.'s (2014) framework was updated as a result of

Table 1
Extended taxonomy of public values for user-centricity (based on Bannister & Connolly, 2014 and Weigl et al., 2022). * Marks the public values that we additionally identified in our systematic review.

Duty-oriented	Service-oriented	Socially oriented
Responsibility to the citizen / political neutrality*	Service to the citizen in his or her different roles	Inclusiveness
Compliance with the law	Respect for the individual	Justice
Efficient use of public funds	Responsiveness / proactivity* / flexible service delivery	Fairness / equity*
Facilitating the democratic will	Effectiveness	Equality of treatment and access
Accountability to government	Efficiency	Respect for the citizen
Economy of public funds	Transparency	Due process
Rectitude	Productivity	Protecting citizen privacy
Legitimacy	Innovation	Protecting citizens from exploitation
Representation of citizens' will and needs		Protecting citizen security
Sustainability*		Accountability to the public
		Consultation / participation* / engagement*
		Impartiality
		Pluralism / diversity*
		Trust / confidence* / reliability*

changes to the government-citizens relationship through user-centric digitization (Weigl et al., 2022). The current study builds on a refined version of the extended public values typology by Weigl et al. (ibid.), specifically focusing on public values relevant for user-centricity in e-government projects.

2.3. Conflict literature

Public values, like the ones identified and catalogued by Bannister and Connolly (2014), are pervasive in public administration. Although largely invisible in daily practice, they shape the core of organizational behavior and routines. What is commonly referred to as organizational culture, comprises "a pattern or system of beliefs, values, and behavioral norms" (Schein, 2016, p. 88) that operate out of conscious awareness. They often materialize in the form of cultural artifacts like norms and practices (Leidner & Kayworth, 2006; Schein, 2016). As the organizational sociologist Lynne Zucker (1977) put it, "once institutionalized, [organizational culture] exists as a fact, as a part of objective reality" (p. 726). This renders organizational culture largely uncontested if not confronted with impulses from outside of the organizational context (Canato, Ravasi, & Phillips, 2013).

Organizational culture is particularly challenged in the context of public administration, where a push for more 'user democracy' and 'user-centricity' introduces change (de Graaf, Huberts, & Smulders, 2014) through processes adaptation and the adoption of IT (Sevaldson, 2018; van Velsen et al., 2009a). Many novel IT emphasize values conveyed by the concept of user-centricity, which often clash with established organizational values (de Graaf et al., 2014). Such conflicts between the adopted technology and organizational culture are commonly called cultural dissonance (Canato et al., 2013; Leidner & Kayworth, 2006).

However, value conflicts surrounding user-centricity do not only pertain to conflicts between IT-transferred/IT-inherent and organizational values. They can be a natural by-product of the value-laden exogenous political landscape (Aschhoff & Vogel, 2018; de Graaf et al., 2014). The resulting value pluralism leads to some values being championed over others, especially when values appear incompatible (Andersen, Jørgensen, Kjeldsen, Pedersen, & Vrangbæk, 2013; Spicer, 2001). Incompatibilities occur in connection with six central dimensions that are "neither […] superior to the other, nor are they equal in value" (Lukes, 1989, p. 125): (1) the purpose and role of government, (2) societal trends, (3) changing technologies, (4) information management, (5) human elements, and (6) interaction and complexity (Dawes, 2009, 2010). The first dimension focuses primarily on the definition of appropriate legal frameworks and performance evaluation methods to better distribute governmental responsibilities. Conflicts often occur between accountability, responsibility, transparency, stewardship, efficiency, effectiveness, and stakeholder values. The second conflict dimension involves demographic variables, such as economic background, ethnicity, and age, that greatly influence participation, the digital divide, and distributive social justice. Possibilities and risks tied to the implementation of novel IT characterize the third conflict dimension. The fourth dimension covers management issues ranging from quality assurance and the accuracy of information to accessibility and usability. The fifth conflict dimension elaborates on the human element, particularly the readiness for change and relevant skills. Finally, the sixth conflict dimension focuses on interaction and complexity, bringing together a cluster of elements that cross the technical, organizational, institutional and personal boundaries. 'Cross-boundary interactions', such as interoperability, collaboration, and cooperation, are particularly important because they rely on complex communication, management and governance dynamics (Dawes, 2009).

Value conflicts in public governance have already been researched extensively (Aschhoff & Vogel, 2018; Costa, Caldas, Coelho, & Gonçalves, 2016; de Graaf et al., 2014; Jørgensen & Bozeman, 2007; Nabatchi, 2017; Thacher & Rein, 2004; Ventriss et al., 2019). Yet, research often does not comprehensively address contradictions between established public values and IT-driven, emerging governance approaches like user-centricity. With increasing digitization of governments, this gap needs to be closed to avoid stalemates in public policy-making and to achieve normative consensus (Aschhoff and Vogel, 2018). More specifically, it is important to understand interactions between established democratic values and IT-based contemporary governance paradigms to establish feasible compromises. The relevance of this research becomes particularly apparent as new technologies, such as surveillance tools, blockchain, and AI, attract decision-makers' attention, and challenge established public values and democratic norms.

3. Research approach

To uncover dominant value conflicts between public values and values championed or introduced by user-centricity, and their conflict sources, we conduct a qualitative systematic literature review (Templier & Pare, 2018). This method helps us to systematically synthesize existing knowledge on public values in the context of user-centricity from different disciplines. At the same time, it enables us to understand the interplay between public values and prominent values of user-centricity. Since we primarily focus on academic literature, we may not capture current value conflicts that may have occurred in grey literature, industry reports, or case studies. Yet, many of our analyzed papers draw on practical examples so that we catch the most discussed value conflicts in e-government.

We follow a five-step systematic literature review approach focused on concepts as defined by Kitchenham (2004). We chose this concept-centric perspective over narrative, critical or realist approaches (Paré, Trudel, Jaana, & Kitsiou, 2015) to ensure replicability, rigor, and objectivity of the review process (Boell & Cecez-Kecmanovic, 2015). Concept-centricity also enabled us to focus specifically on public values in the context of user-centricity and not the overall public value discourse. Kitchenham (2004) describes five distinct steps: (1) study identification, (2) study selection, (3) study relevance and quality assessment, (4) data extraction, and (5) data synthesis. For step three, we used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol by Moher et al. (2009). Moreover, we included a snowball sampling step to saturate our data set to the best of our knowledge (Webster & Watson, 2002). The following subsections provide a more comprehensive overview of how we applied Kitchenham's (2004) five steps.

3.1. Study identification

We conducted a keyword search (see Table 2) across five databases (IEEE Xplore, ScienceDirect, SAGE Journals, SCOPUS, and Taylor and Francis). We used speech and spelling variants of our key concepts, such as "user-centricity", "user-centric", "user centric" and "user-centered", or "eGovernment" and "e-government" to avoid language bias. We also determined inclusion and exclusion criteria for our literature search according to discipline, topics, publication type, language and publication year (see Table 3).

As indicated in Table 3, we targeted publications from various disciplines. We avoided research on the early stages of e-government, which mainly explored the design of government portals and websites, by including only articles published in 2012 or later. We collected the initial data until February 2022. During the writing process of our paper, we conducted another data collection iteration to include recent publications. The last search was conducted in January 2023. See Tables 4-7 for further details and metadata, including the year of publication, publication type, method and geographic scope of the selected publications.

Table 2
Search strings for the systematic literature review.

#	Search String						
A	"User-centricity"	AND	"Government"	OR	"Public sector"	OR	"Public administration"
B	"Citizen-centricity"	AND	"Government"	OR	"Public sector"	OR	"Public administration"
C	"Values"	AND	"E-government"	OR	"Digital government"	OR	"Digital transformation"

Table 3
Literature search selection criteria. * Marks the criteria that had to be re-applied in the title and abstract selection procedure.

	Inclusion criteria	Exclusion criteria
Discipline*	Information Systems Library and Information Science Public Administration Economics and Sociology Public Policy Business, Management and Accounting Marketing and Sales	Engineering Computer Science and Security Mathematics Natural and Life Sciences
Topics*	User-centricity; citizen-centricity; e-government; emerging technologies; public values	Architecture; systems, government portals and websites; social media; survey studies from 2012 or before; value creation
Publication type	Book chapters Peer reviewed articles Doctoral theses Conference articles	Books Bachelor or Master theses
Language	English	Non-English
Publication year	2012 – 2023	Articles published before 2012

Table 4
Number of papers based on their publication year.

Year of publication	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Number of papers	6	11	7	8	9	3	7	6	4	8	1	1

Table 5
Number of papers based on their type.

Type of article	Book chapters	Conference articles	Peer-reviewed journal articles
Number of articles	5	16	50

Table 6
Number of papers based on the research method used.

Research method used	Design research	Formal	Mixed	Qualitative	Quantitative
Number of articles	3	2	7	44	15

3.2. Study selection

For the second step of Kitchenham's (2004) approach, we used the PRISMA protocol by Moher et al. (2009) in combination with the citation-chaining approach recommended by Webster and Watson (2002) (Fig. 1). PRISMA follows four steps – (1) identification, (2) screening, (3) eligibility, and (4) inclusion. During the identification stage, we collected 7168 potentially relevant scientific contributions after removing duplicates and books.[2] All identified literature was exported into the bibliographic reference manager Zotero. In the second phase, two authors independently screened the various papers based on a thorough assessment of their titles and narrowed the selection to 228 articles. The authors first presented their selection to each other and compared their results. After thorough discussion, only studies selected by both authors were considered for closer examination. During this exclusion procedure, we re-applied our pre-defined search selection criteria (Table 3).[3] In a sub-step of the screening phase, the two authors discussed selected publications based on their abstracts, which reduced the selection to 158 articles. In a further refinement exercise, we grouped the 158 articles according to the timeliness of their data and central foci (Kitchenham, 2004). After the exclusion of an additional 24 publications, we retained overall 134 articles. The excluded publications presented cases of digital transformation that we considered outdated or did not focus on technologies in the public sector. Examples include studies that analyzed social media, as well as studies with survey data from before 2012, or non-English publications. When retrieving full-text articles, eight papers were inaccessible, which reduced our number of studies to 126.

3.3. Study relevance and quality assessment

After reading the full papers, 47 out 126 articles were selected for our qualitative analysis. We selected these articles based on their relevance and usefulness in analyzing public values in the context of user-centricity. The quality of the papers is assessed through the articles' citations per year and the journal's impact factor. The snowball sampling added another 23 papers to our dataset. The update of our literature review in January 2023 yielded 1 paper that was not included in our literature search from the first cycle. This led to overall 71 papers eligible for qualitative analysis. The complete list of papers can be found in the Appendix.

Our selected papers are evenly distributed between 2012 and 2021. The data collection took place first in 2022 and later in 2023, which might explain the drop in analyzed articles from these 2 years.

50 papers were published in peer-reviewed journals, 16 in conference proceedings, and 5 in book chapters. This distribution highlights

[2] The search operators were usually applied to full text and metadata. However, in cases where our search yielded more than 700 publication results, we restricted the search fields to key words, abstract or introduction, depending on the available filters of each database.

[3] As the heterogenous search tools of the respective databases also yielded studies which were not related to our key concepts, we had to re-assess the selection criteria manually regarding the topic and discipline of the articles.

Table 7
Number of papers based on the origin of their data or focus of their analysis.

Data origin / analysis focus	Number of articles
Australia	1
Canada	2
Denmark	1
Egypt	1
Europe	3
Finland	3
France	1
Germany	3
Greece	1
Hong Kong	1
India	6
Iran	1
Jordan	1
Kazakhstan	1
Mexico	3
Namibia	1
Netherlands	3
New Zealand	1
Norway	1
Peru	1
Qatar	1
Rwanda	1
Singapore	1
Taiwan	1
Tanzania	1
Thailand	1
Turkey	1
UAE	1
Uganda	1
United Kingdom	1
United States	5
Worldwide	29

the overall high-quality of our selected papers.

Most articles were based on qualitative approaches, but 15 followed quantitative methods, and 7 used a mixed-method approach. Only 3 papers employed a design research method and 2 used formal methods.

Our selected papers covered a wide geographic range, with a satisfying mix of local, regional and worldwide foci. All continents were represented, which not only highlights the topic's relevance but also confirms our methodological rigor. For more details, the Table 7 provides a holistic summary. The number of papers, however, is not absolute since some studies had several countries as focal points. Where studies covered too many countries or were not specific enough, we listed them for the bigger geographical delimitation, i.e., Europe or worldwide.

3.4. Data extraction

We have already extracted the metadata from our literature while selecting studies using a spreadsheet. This helped us skim through titles and abstracts. Once the final set of literature was determined, the 71 downloaded articles were imported to MAXQDA, the software program used for our analysis (Mayring, 2014; Rädiker & Kuckartz, 2018).

3.5. Data synthesis

We performed a qualitative document analysis to synthesize and analyze our data. We manually coded 71 papers in two separate coding teams following a three-stage coding process (Fig. 2) of inductive and deductive coding (Saldaña, 2021). We began with open, inductive coding to identify general principles of user-centricity, which we define as first-order concepts (Gioia, Corley, & Hamilton, 2012) in our literature. In a second axial coding cycle, we coded deductively by referring back to the three user-centricity dimensions and the public value framework by Bannister and Connolly (2014). During this second coding process, we re-grouped and allocated, where possible, some of the codes from the first cycle into given dimensions and emerging frameworks, i.e., second-order themes (Gioia et al., 2012).

This process led to 5369 coded segments. To identify conflicts between public values and user-centricity as well as their context, we inductively re-analyzed the coded statements in a third cycle. During this third coding round, we summarized and aggregated our findings to identify the most salient conflict areas. The aggregation of our findings reduced the total number of coded segments to 5070 (Miles, Huberman, & Saldaña, 2014). In a repetition of the third cycle, we synthesized our set of codes by refining and reducing it to the most critical and useful concepts and categories. This cut the number of coded segments to 2504.

We performed a code relation analysis followed by a qualitative content analysis to identify the most dominant conflicts between user-centricity characteristics and public values (Mayring, 2014). The code

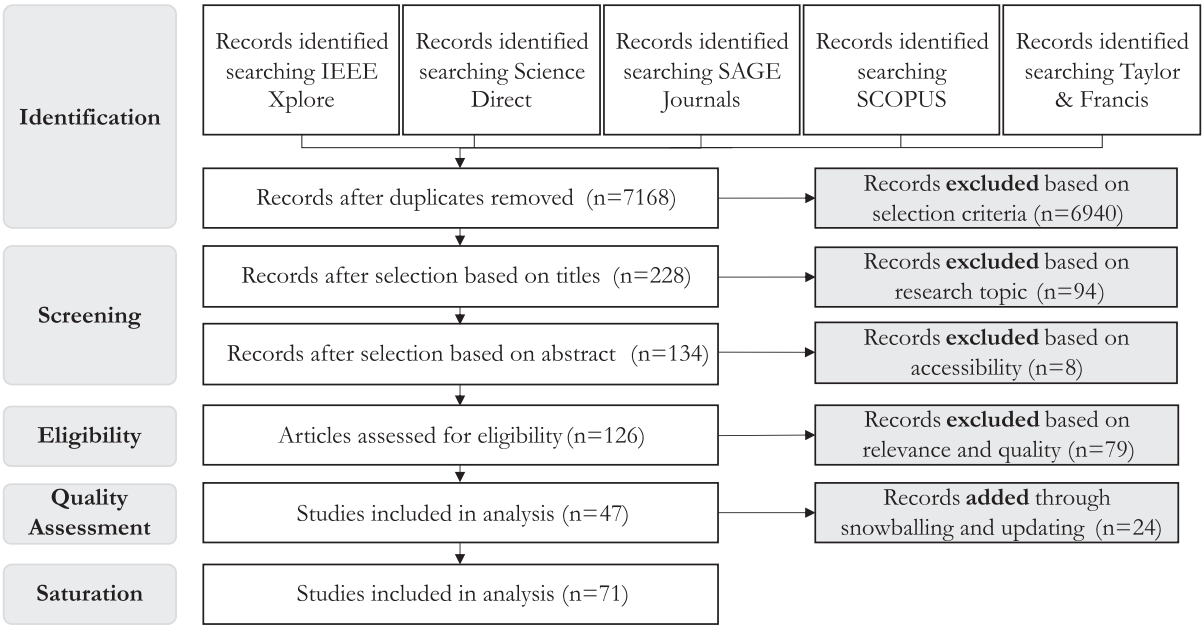

Fig. 1. Adapted PRISMA flow diagram (Kitchenham, 2004; Moher et al., 2009; Webster & Watson, 2002).

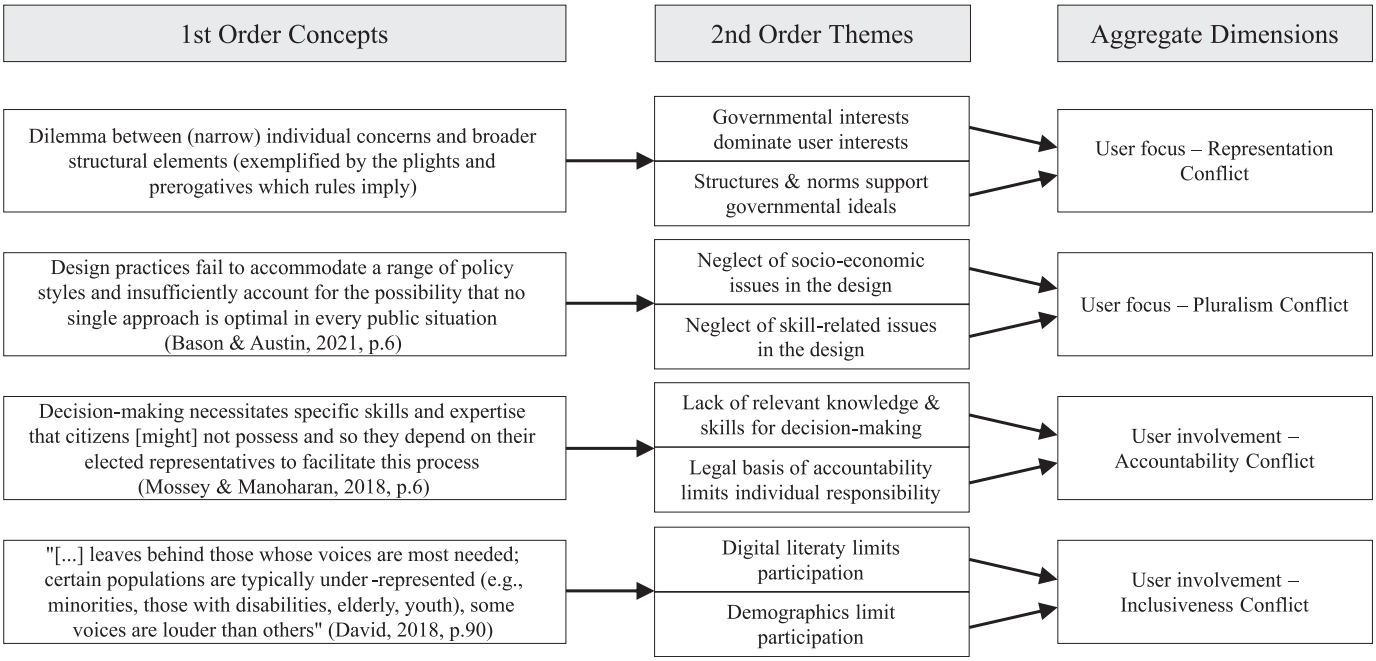

Fig. 2. Conflicts between public values in the context of user-centric e-government approaches.

relation analysis helped us observe co-occurrences in close proximity (in the same paragraph, for example) between codes that were assigned to one of the two main concepts. An additional qualitative coding query allowed us to investigate which co-occurrences indicate conflicts between established public values and values introduced or championed by user-centricity. Once we identified our main conflicts, two coders bilaterally discussed the allocated codes to contextualize dominant value conflicts.

This contextualization required a more abductive approach to identify concrete conflict sources as influencing factors. Abductive analysis typically "involves a recursive process of double-fitting data and theories" (Timmermans & Tavory, 2012, p. 179). That is, the author team met and discussed the coded segments that indicated a conflict source. We focused on recurring themes in different contexts across several of our analyzed papers. Our 'revisiting of the phenomenon' (Timmermans & Tavory, 2012) helped us discern the most salient conflict sources in our coded segments. Close observation of potential conflict sources also spurred 'defamiliarization', i.e., identifying "objects that were relegated to the background of our experience, as they were too taken for granted to be given a second thought" (Timmermans & Tavory, 2012, p. 177). Since many public values are a natural part of our status quo, they are difficult to identify even in a conflict situation. By deconstructing the status quo, we could alienate ourselves from the familiar and observe the causes of emerging conflict patterns. Our knowledge of relevant papers and theories in public administration, in addition to the occurrence of the same conflict sources across different cases, helped us to facilitate 'alternate casing' (Timmermans & Tavory, 2012) and discern our third-order codes. These codes delivered important insights underlying the emergence of conflicting values and user-centricity characteristics in e-government. We also repeatedly met to interpret the interplay between existing theories and their surfacing third-order codes. This included discussions about the differences and overlaps between our second-order themes and the aggregate dimensions (Gioia et al., 2012) until we reached an overall consensus.

4. Value conflicts and their causes

Our abductive coding helped us contextualize the dominant conflicts and identify the most plausible conflict sources by revisiting possible conflict sources in different contexts and actively deconstructing our own taken-for-granted status quo. This "iterative dialogue […] between data and an amalgam of existing and new conceptualizations" of value conflicts in e-government, allowed us to "cull […] and narrow […] possible theoretical leads" (Timmermans & Tavory, 2012, p. 180). More specifically, the revisiting of similar value conflicts and the defamiliarization of the public value context showed that not all identified conflicts in literature have their roots in values of user-centricity. It is rather the *implementation* of user-centric systems and services that introduces new and highlights specific public values over others. Alternate casing with different theories that pinpoint value deficiencies in either the user-centric system or the environment showed that the source of conflict is not the presence or absence of a certain public value, but value pluralism. Value pluralism occurs when several values are relevant but not equally prioritized. The simultaneous fulfillment of particular or multiple public values automatically (sometimes unintentionally) sacrifices or diminishes other non-negotiable public values, which leads to value conflicts. We specifically identified conflicts between established public values and values introduced or championed by user-centricity.

In this section, we elaborate on the abductive analysis of the value conflicts that have been identified between the user-centricity dimensions and public values in e-government. Since many user-centric values appear naturally aligned with values in public administration, many conflicts were unexpected. Overall, we found four dominant conflicts (see Table 8): (1) a user focus-representation conflict based on the assumption that citizens and governments have diverging interests and needs; (2) a user focus-pluralism conflict, which posits that users are not solely the target group of young, educated, and technology-conscious people; (3) a user involvement-accountability conflict that contrasts the compatibility of active citizen participation with the accountability of public officials; (4) a user involvement-inclusiveness conflict that illustrates the selective representation of citizens through digital channels. After identifying the four dominant conflicts from the literature, we wanted to better understand their context and identify potential causal links. Revisiting these conflicts and their sources provided the ground for a deeper, more nuanced discussion among the author team. During the subsequent defamiliarization phase, we aimed to find plausible explanations and sources from which the identified conflicts materialized by deconstructing the moral foundations of the

Table 8
Summary of value conflicts and conflict sources identified in the literature.

Value conflict	Conflict dynamic
User focus-representation	Citizens and governments have diverging interests and needs. Due to this divergence, governments cannot represent users' needs to the extent prescribed by user-centricity.
User focus-pluralism	The implementation of a user-centric technology can face the possibility that no single approach is optimal in every public situation in a pluralistic society that tolerates and supports diversity.
User involvement-accountability	Incompatibility between the active participation of citizens on the one hand, and the accountability of public officials at the government level on the other.
User involvement-inclusiveness	Inclusiveness in the collaborative design stage might be impaired due to citizens involvement through online channels and platforms.

Conflict source	Conflict source dynamic
Decision-making dominance	Pertains to the power imbalance between experienced decision-makers (facilitators, experts, community members) and other involved stakeholders, such as IT professionals and research consultants. In case of doubt, decision-makers can overrule suggestions and prioritize their desired values in the system's design choices. Consequentially, decision-makers can countermand findings from user research and/or user-centric design approaches.
Degree of participation	Pertains to the extent to which citizens can arguably be involved in collaborative design. Oftentimes, the diverging interests of different social groups cannot be equally respected in a consolidated system design. Thus, due to a lack of resources, individual citizens can only participate up to a certain degree. In other words, some voices are not heard because the people who would express them lack the resources, including knowledge and awareness, or their participation is not sufficiently effective.
Resource deficit	Refers to two main elements: (1) The lack of technical information and digital literacy among the providers or recipients of digitized public services in an information society that relies on continuous learning, and technological knowledge. (2) Lacking financial means to be able to acquire the necessary devices or access to a network in order to make use of a digital service, and non-existent infrastructure, which hampers connection and thereby access to public services provided through digital channels.
Establishment-innovation issue	Results from novelty-averse, hierarchical and bureaucratic structures, as well as budgetary constraints in the public sector, and the dynamic, risk tolerant and agile nature of innovation. Service providers governance structure and cultures are thus too slow and stiff to embrace the fast and iterative methods required for user-centricity
Multistakeholder issue	Stems from problems arising from multistakeholder governance in which many, possibly conflicting interests are incorporated in the dialogue, decision-making, design and implementation. Simply put, within a service provider organization, different groups have conflicting interests that must be accounted for. User-centric design is overlapping with co-design or participatory design. This does not only refer to the involvement of users, but also to the representation of different stakeholders, such as the government itself, consulting experts, and citizens. Therefore, governments face complexities when trying to integrate users into the design of digital services. The multistakeholder issue also involves risks undermining the participatory nature of the user-centric ideal due to public mind manipulation by lobby groups if such co-design processes are not overseen properly.

conflict environment. Moreover, we iterated our emerging conflict sources with existing theories in public administration. This alternate casing allowed for a more holistic analysis of the possible conflict sources and helped us add nuance while ensuring a relevant degree of generalization (Timmermans & Tavory, 2012). In total, five conflict sources emerged (see Table 8): (1) the decision-dominance issue that encumbers decision-making processes due to power and information asymmetries; (2) the degree of participation issue that raises the question how citizens can and want to participate in collaborative design; (3) the resource deficit issue that refers to knowledge, literacy, and financial gaps; (4) the establishment-innovation issue that contrasts established organizational structures in public administration with organizational flexibility needed enable technological innovation; (5) the multi-stakeholder issue emerges from the challenge of uniting various stakeholder interests from governmental, industry and civic sector at regional or national level.

Since our findings reported in relation to the co-occurrence of conflicts and conflict sources emerged during an abductive analysis, we cannot speak of statistical causation or correlation. Whenever we refer to some of these contextual factors as *conflict sources*, we intend to provide a theory (Timmermans & Tavory, 2012) for the identified conflicts from a qualitative abductive point of view.

Table 9 displays the level of co-occurrence between conflicts and their sources based on our systematic literature review and subsequent abductive analysis. A detailed list of articles at the intersection of these concepts can be found in the Appendix in Table 11.

4.1. User focus-representation conflict

The *user focus-representation conflict* describes the divergent interests and needs of citizens and governments that culminate in the governments' inability to represent users' needs compatible with principles of user-centricity (Berg, Lindholm, & Högväg, 2021; Clark, 2021; de Graaf et al., 2014; Grube, 2013; Ingrams, 2019; Kassen, 2021; Kotamraju & van der Geest, 2012; Kyakulumbye, Pather, & Jantjies, 2019; Miniaoui, Hashim, Atalla, Hashim, & Ismail, 2020; Mossey, Manoharan, & Bennett, 2018; Nabatchi, 2012; Park & Humphry, 2019; Sigwejo & Pather, 2016; Sorn-in, Tuamsuk, & Chaopanon, 2015). Central to this claim are three main issues.

Firstly, governments typically focus on accountability as defined by law or on "fulfilling […] requirements rather than trying to understand the needs of their users" (Kotamraju & van der Geest, 2012, p. 1; Kyakulumbye et al., 2019; Miniaoui et al., 2020; Sorn-in et al., 2015). The narrow definition of accountability binds them to specific legally defined standards, which can result in a "dilemma between […] individual concerns and broader structural elements (exemplified by the plights and prerogatives which rules imply)" (de Graaf et al., 2014, p. 17; Grube, 2013). This dilemma is particularly highlighted in implementations of user-centricity where infamously complex and inflexible bureaucratic procedures prove difficult to align with users' preferences, such as simplicity, efficiency and anonymity. Such misalignment with

Table 9
Co-occurrence between conflicts and their sources.

Conflict source	Conflict			
	User focus-representation	User focus-pluralism	User involvement-accountability	User involvement-inclusiveness
Decision-making Dominance	**High**	*None*	**High**	Low
Degree of Participation	Low	Low	Low	**High**
Resource Deficit	Low	**High**	Low	**High**
Establishment-Innovation	Low	**High**	**High**	Low
Multistakeholder	**High**	Low	Low	*None*

user needs appears to stand in the way of more user-centric e-governments that desire "serious, long-term committed relationships with their citizens and inhabitants. [U]sers, on the other hand, particularly when they are in information-seeking mode, want a quick foray into e-government" and consider complex processes and long wait times tedious (Kotamraju & van der Geest, 2012, p. 11). These conflicting visions of a productive citizen-government relationship encumber a further integration of user-centric values into the design of e-governments (ibid.).

Secondly, even in less bureaucratic structures, service designers are "generally unaware of how their values influence the ability to achieve desired values of public participation, such as legitimacy, justice, and effective administration" (Clark, 2021, p. 5; Ingrams, 2019; Kotamraju & van der Geest, 2012; Sorn-in et al., 2015). They typically "choose to downplay the normative element of e-government and […] design and develop services based on their ideal, rather than the actual relationship between governments and citizens. [This naturally] has adverse consequences for e-government's user-centricity and, ultimately, its adoption and use" (Kotamraju & van der Geest, 2012, p. 3). Socio-technical dynamics of technology adoption and integration into social systems and processes are particularly affected. They are typically "inscribed with the rules, values and interests of typically dominant groups" (Park & Humphry, 2019, p. 935).

Thirdly, it is difficult to ensure that the quality, validity and representation of such multidimensional public opinion and user-generated data is not contested (Berg et al., 2021, p. 232; Kassen, 2021; Kotamraju & van der Geest, 2012; Mossey et al., 2018; Nabatchi, 2012; Park & Humphry, 2019). Dominant decision-making, i.e., "where the individual will [is] superseded by the collective will" (Grube, 2013, p. 2) is the underlying conflict source in observed *user focus-representation conflicts*. It appears to be rooted in the challenges arising from increasing multi-stakeholder dynamics of user-centricity implementation, and the negligence of minority opinions in user-centric e-government designs.

4.2. User focus-pluralism conflict

The second critical conflict is the so-called *user focus-pluralism conflict* (Aschhoff & Vogel, 2018; Bason & Austin, 2022; Berg et al., 2021; Bokayev et al., 2021; Brown, 2021; Cordella & Bonina, 2012; de Graaf et al., 2014; Gupta, Bhaskar, & Singh, 2016; Gupta, Singh, & Bhaskar, 2016; Gupta, Singh, & Bhaskar, 2018; Kotamraju & van der Geest, 2012; Larsson, 2020; Madan & Ashok, 2022; Mariën & Amon Prodnik, 2014; Park & Humphry, 2019; Scott, DeLone, & Golden, 2016). Here, pluralism does not refer to classical pluralism in political decision-making theory but relates to a pluralistic society that tolerates and supports diversity. The strong focus on technology in user-centric e-government approaches may jeopardize pluralism if primarily young, educated, affluent, and technology-conscious people can use the system (Aschhoff & Vogel, 2018; Berg et al., 2021; Bokayev et al., 2021; Brown, 2021; de Graaf et al., 2014; Gupta et al., 2018; Kotamraju & van der Geest, 2012). Design practices without the conscious integration of pluralism and different policy styles would counter user-centric ideals to equally include all members of society (Bason & Austin, 2022, p. 6; Cordella & Bonina, 2012; Park & Humphry, 2019).

At the same time, it is recommended "not to design for a very specific nonrepresentative target group or task" (Kotamraju & van der Geest, 2012, p. 8) since such a narrow focus can be costly and inefficient even in user-centric designs. "Good practice demands that design […] supports […] the most commonly performed tasks or requests, for the largest or most important target groups" (Aschhoff & Vogel, 2018; Kotamraju & van der Geest, 2012, p. 8). Thus, "social challenges such as language barriers, low digital literacy, low user-friendliness of government websites, inability to access internet and lack of awareness in citizens" should be tackled before shifting to public service formats that are only available to a select few (Gupta, Singh, & Bhaskar, 2016, p. 162). Digitally less literate citizens, or people with restricted access to technological devices and connectivity cannot be passed over. Dismissing their needs is morally questionable and would "disproportionally affect citizens with low socio-economic status and demographic groups already suffering from other types of discrimination" (Gupta et al., 2018; Larsson, 2020, p. 2; Mariën & Amon Prodnik, 2014; Park & Humphry, 2019).

The establishment-innovation issue and resource deficits explain the existence and saliency of this conflict in user-centric approaches (Aschhoff & Vogel, 2018; Bason & Austin, 2022; de Graaf et al., 2014; Grube, 2013). Different from private services, government services need to be relevant and available for all (Kotamraju & van der Geest, 2012). This is a complex endeavor and "runs counter to user-centricity" (ibid, p. 11). At the same time, governments cannot let their digital transformation be driven by market logic. Such logic would risk enforcing socio-economic discrimination and goes against public values of impartiality and equality. Kotamraju and van der Geest, (2012, p.8) describe the establishment-innovation issue by summarizing some of the key challenges in user-centered designs for e-government: (1) users and governments hold contradicting visions of a task, (2) governments cannot choose the audience to which their services should be tailored, (3) users and governments have different commitments to legal rules and regulations, while (4) both have different desires about the nature of their relationship. Governments typically strive for a long-term and proactive relationship with their citizens, while users prefer a transactional relationship with their public service providers.

4.3. User involvement-accountability conflict

In the *user involvement-accountability conflict*, literature questioned the compatibility between the active participation of citizens in digital services design as envisioned by user-centric e-government and the required accountability for public officials (Aschhoff & Vogel, 2018; Bason & Austin, 2022; Berg et al., 2021; de Graaf et al., 2014; Ghosh Roy & Upadhyay, 2017; Grube, 2013; Ingrams, 2019; König, 2021; Kotamraju & van der Geest, 2012; Mossey et al., 2018). The ideal of user involvement, typically highlighted in the context of user-centricity, encompasses the "tradition of participatory democracy […], including […] user democracy, listening to public opinion, and dialogue" (Aschhoff & Vogel, 2018, p. 10). Professional accountability, or what Bannister and Connolly (2014) term 'accountability to government', entails the "compliance of public managers with professional standards and formal rules and regulations" (Aschhoff & Vogel, 2018, p. 10; Kotamraju & van der Geest, 2012). Even if forced into user-centric approaches, these values are difficult to reconcile and often result in two conflicts.

First, public servants must comply with a complex set of standards and rules that citizens are unaware of (Aschhoff & Vogel, 2018; de Graaf et al., 2014; Grube, 2013; Kotamraju & van der Geest, 2012). These standards and rules limit citizen involvement to areas that do not require tight regulation. Thus, "all […] proactiveness of citizens and end users may be of little use or even get nullified" where they would be legally accountable for their involvement (Ghosh Roy & Upadhyay, 2017, p. 76). Bason and Austin (2022) further contrast this *classical* 'accountability' approach, which values 'scientific-ness' and fair outcomes, with *human-centered* (here user-centered) approaches propagating user empowerment. They argue that human-centered designs fail to sufficiently account for several requirements of public sector design, such as capacity constraints, different policy styles, and the reality of policy mixes (Bason & Austin, 2022).

Secondly, representative theory suggests that "decision-making necessitates specific skills and expertise that citizens [might] not possess" (Berg et al., 2021; Grube, 2013; Mossey et al., 2018, p. 6). Despite the desirability of citizen participation in user-centric e-government designs, there are risks that strong user involvement may swing "the pendulum […] too far from the rightly criticized technocratic vision of a smart city" (König, 2021, p. 6).

Power dynamics between decision-makers and stakeholders may

further exacerbate the *user involvement-accountability conflict*. Government officials can overrule external stakeholder decisions that would not comply with regulations to ensure fairness and avoid arbitrary rulings. Yet, this power dynamic already foreshadows the establishment-innovation conflict, in which governmental structures determine to what extent user-centricity can be reconciled with existing hierarchies.

4.4. User involvement-inclusiveness conflict

User-centricity foresees the involvement of citizens in the design stage primarily online, which compromises inclusivity (Berg et al., 2021; Clark, 2021; David, 2018; Kassen, 2021; König, 2021; Kotamraju & van der Geest, 2012; Mariën & Amon Prodnik, 2014; Park & Humphry, 2019), manifesting in a *user involvement-inclusiveness conflict*. Citizen involvement "often leaves behind those whose voices are most needed [as it] it takes time, patience, and resources [as well as specifically trained] administrators and decision makers […] to deal with citizens" (David, 2018, p. 90). For example, digitally less literate citizens may face neglect in participatory e-government initiatives (Kassen, 2021; König, 2021; Mariën & Amon Prodnik, 2014; Park & Humphry, 2019). Yet, this conflict does not only unilaterally emerge from the physical, financial, educational, or other socio-economic obstacles and barriers citizens might encounter. A focus on user involvement can further "[affect] inclusiveness, since deliberation can be a demanding form of participation" (Berg et al., 2021, p. 233), and "might reinforce existing inequalities in political participation" (ibid.; König, 2021; Mariën & Amon Prodnik, 2014; Park & Humphry, 2019).

The degree of participation in user-centric designs, therefore, has a strong influence on the *user involvement-inclusiveness conflict*. User involvement and citizen engagement are often "neither realistic nor necessary" even if digital channels were available for all (König, 2021, p. 6). Participating citizens typically have the relevant knowledge and skills to interact with government technology (Berg et al., 2021; Bokayev et al., 2021; David, 2018; Gupta et al., 2018; Gupta, Singh, & Bhaskar, 2016; Park & Humphry, 2019), and can access their network and financial resources (David, 2018). The latter also often coincides with the readiness to adopt new technologies and ownership of digital devices (Gupta et al., 2018; Larsson, 2020; Mariën & Amon Prodnik, 2014). These characteristics systematically exclude user groups whose voices are already underrepresented in current e-government approaches (David, 2018; Mariën & Amon Prodnik, 2014). As such, the dimension of the *user involvement-inclusiveness conflict* shares similarities with *the user focus-pluralism conflict*. Both conflicts exacerbate the marginalization of user groups either at the collaborative design or the application and implementation stage.

5. Discussion and opportunities for further research

Integrating user-centricity into e-government services is not only a popular design approach, but also a widely recognized and desired requirement (Kujala, 2003; van Velsen, van der Geest, ter Hedde, & Derks, 2009b). Our systematic review of the academic literature shows that values introduced or championed by user-centricity designs sometimes conflict with established public values. According to the reviewed and synthesized literature on user-centricity and public values from 2012 to 2023, value conflicts occur in different contexts. Current research shows that they can either be core dynamics of user-centricity, causing a clash between user-centric approaches and public values, or they can occur as a result of user-centric implementations. To further elaborate on why these conflicts arise, we identified conflict sources through an iterative process of abduction in the selected literature. While our analysis provides plausible theories, further research will be required to empirically determine conflict sources or contextual factors and provide mitigation strategies. A potential starting point for empirical research is Dawes' (2009, 2010) six central conflict dimensions. We present how the dimensions may interact in Fig. 3.

In the remainder of the section, we focus only on the most relevant contributions for research and the path forward to furthering our understanding of the dynamics at play. That is, we elaborate on decision-making dominance in the context of user representation (5.1.), and the difficulty of bridging the gap between established government structures and innovation based on user-centric ideals while upholding the principles of government accountability (5.2.). We also touch on the problem of resource deficits to highlight the need for inclusive participation in user-centric e-government (5.3.). Our research presents a first step in closing the gap of translating values introduced or championed by user-centricity into public policies and service designs.

5.1. Decision-making dominance and the representation conflict

The representation of citizens as users is challenging when institutional structures require decision-makers to prioritize certain preferences over others. This raises questions of how user-centric design can ensure that participation is more equally distributed and how government can integrate user-centric values into the delivery of services (Vigoda-Gadot, 2002). Most importantly, research should explore the establishment of normative pluralism and prevent adverse effects for representation through the implementation of user-centric designs. This may also entail investigating if institutional structures would allow for an increased user focus, and if such a focus would yield promised benefits. Due to the involvement of different actors, which challenges the balance between optimal representation and efficient decision-making, we see a substantial overlap with Dawes' (2009) *interaction and complexity dimension*. Moreover, considering the influence of governmental decision-making on this balance warrants a deeper analysis of Dawes' (2009) first dimension – *the purpose and role of government* – concerned with governmental responsibility. Other research has started shedding light on these dynamics and deserves further exploration in this context. For example, the extent to which competent civil society representatives can support the design process and counterbalance unilateral decision-making (Pozzebon, Cunha, & Coelho, 2016; Yang & Pandey, 2011), and their capacity to bring consensus, trustworthiness and legitimacy (OECD, 2022; Porumbescu, 2016).

5.2. Establishment-innovation issue and the accountability conflict

Embedding accountability conflicts in user-centric approaches with the establishment-innovation issue presents a continuation of existing public administration paradigms. Where the NPM approach adopted market logic and private sector management models, the DEG and public value management paradigm emphasize citizen engagement in digital government initiatives and advocate for public values beyond performance-based indicators (Bryson, Crosby, & Bloomberg, 2014). The latter two thus accommodate key values of user-centricity to a greater extent than NPM. Yet, the accountability conflict shows that it is difficult for such new values to thrive in a highly institutionalized environment. Despite efforts to encourage a more innovative and user-centric mindset in public administration, additional research will be required on how the relationship between citizens and public administrations in e-government can be designed. Drawing on Dawes' (2009) conflict dimensions, we see an overlap with four dimensions: (1) *role and purpose of government*, which encompasses the legal, administrative and bureaucratic processes of the public institutions and their accountability; (2) *changing technologies*, which centers around the implementation of novel IT in institutions and organizations; (3) *information management*, which concerns information quality, accessibility and usability as part of a functioning innovation process; and (4) *societal trends*, which highlights the demographics of society, such as socio-economic status, income, age or education.

Relevant research to better apprehend these complex dynamics includes Fung (2015), who highlights the difficulty for public officials or public service providers to take responsibility for user-driven design

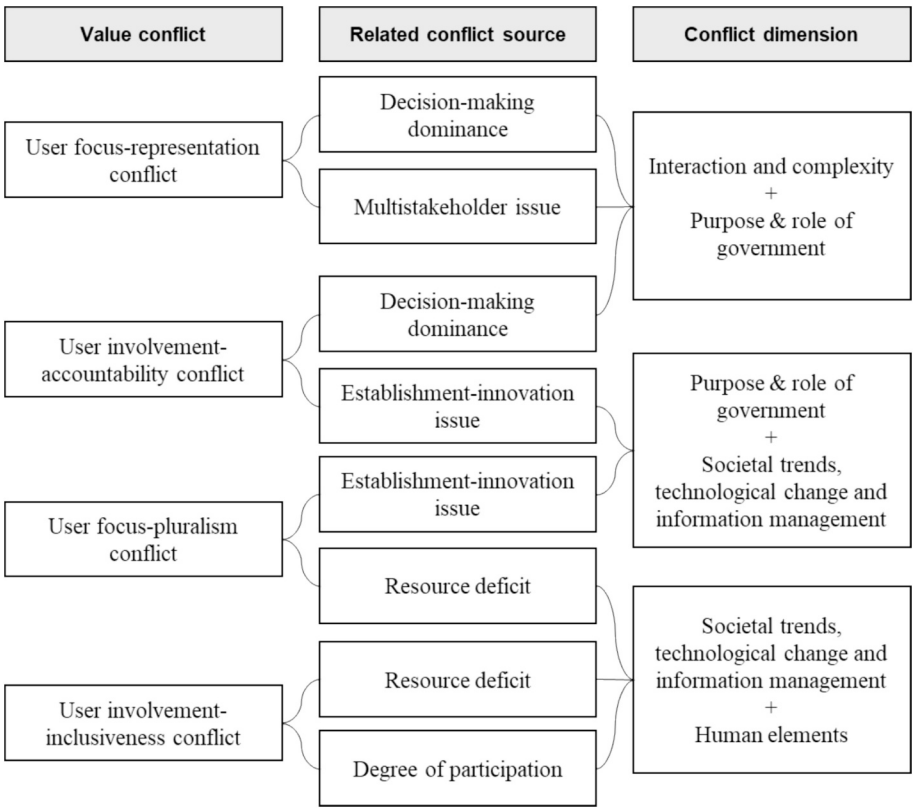

Fig. 3. Embedding public value conflicts in user-centric e-government, their sources and Dawes' central conflict dimensions (2009, 2010).

choices – especially when users' preferences clash or are not reconcilable with established institutional rules and incentive systems. They suggest that policy-makers need to pay attention to the way they integrate user-centric IT into their interaction with citizens, and consider the "full menu of design choices" available to them (Fung, 2015; OECD, 2022). The role of specific agencies or ministerial branches – such as GovTech labs – that work at the intersection of public administration and industry has also been researched (Bharosa, 2022). In this context, their capacity to keep the balance between innovation and institutional norms has been highlighted. In fact, multidisciplinary teams encompassing innovative companies, academia and government, with a shared objective for innovating and the relevant budget to reach prototyping stages rapidly, have been suggested to support innovation without sacrificing governmental accountability (Tõnurist, Kattel, & Lember, 2017). Moreover, the integration of emerging innovations into value-sensitive design principles can ensure ethical alignment and user-centered development (Friedman & Hendry, 2019). This research angle deserves to be further explored so that adequate solutions can be found that strike a balance between fostering experimentation and ensuring responsible innovation.

5.3. *Resource deficit and the pluralism and inclusiveness conflict*

The conflict contrasts the reality of a diverse society with society's ideal of the digitally literate individual. The inclusiveness conflict with its focus on the pursuit of user engagement and the simultaneous discriminatory exclusion of individuals, is closely related (Mariën & Amon Prodnik, 2014). Both conflicts can be attributed to resource deficits, which encompass a lack of digital skills, a lack of financial resources, and insufficient access to digital infrastructure in rural areas. A lack of awareness among service designers, who are often unaware of inclusiveness challenges or do not know how to address them, can exacerbate the conflict (Bär, 2017). Yet, the much-needed involvement of citizens as stakeholders in the design process is often inhibited by the above-mentioned resource deficits.

Thus, a third path for future research is to analyze the impact of user-centricity on resource-based technological discrimination and exclusion, and on ways to mitigate these effects in practice. Continuing the work of Alomari, Sandhu, and Woods (2014) at a larger scale, the distinction of the impact in different geographical areas might be particularly interesting to evaluate. This would enable a more nuanced approach to account for different demographics and technological maturity across countries. Further research is also needed to better understand how government measures can impact individual resource deficits. It has been proposed, for instance, that developing digital literacy and digital skills alongside general educational objectives could present an effective measure (Choudhary & Bansal, 2022; Méndez-Domínguez, Carbonero Muñoz, Raya Díez, & Castillo De Mesa, 2023). It would require, for instance, the deployment of community officers to provide technology advice and support for digital public services (Suchowerska & McCosker, 2022), and investments into better affordability and coverage of digital public infrastructure (Shenglin, Simonelli, Ruidong, Bosc, & Wenwei, 2017). Research on the impact of non-digital alternatives as mitigation measures (see e.g., Reddick & Anthopoulos, 2014) also contributes to a better understanding of this challenge. This research can be grounded in four dimensions of Dawes' framework: (1) *changing technologies*; (2) *information management*; (3) *societal trends*; and (4) *human elements*.

6. Conclusion

User-centric principles in e-government garner support from different governments worldwide that seek to improve their public services. Aimed at benefitting the user, user-centricity is often assumed to naturally complement established public values. Governments typically build on public values to deliver services and interact with citizens. Our study challenges this assumption and deconstructs emerging conflicts between the implementation of values introduced or championed

by user-centricity and established public values. We ground our analysis in a systematic literature review of user-centricity in e-government and gather evidence of value conflicts as well as their underlying sources. Our analysis included more than 7000 articles from an eleven-year period, out of which we qualitatively coded 71 in two separate coding teams. Following this extensive review, we synthesized the knowledge from three different disciplines and identified emerging patterns from individual observations.

We show that user-centricity and public values conflict in four notable areas: the conflict between *user focus* and citizen *representation* and *pluralism*, and the conflict between *user involvement* and government *accountability* and societal *inclusiveness*. Abductive reasoning helped us discern why these conflicts emerge. We postulate five main influencing factors: the *decision-making dominance issue*, the *degree of participation issue*, the *resource deficit issue*, the *establishment-innovation issue* and the *multistakeholder issue*. The prevalence of these issues within service delivery environments proves that they are not isolated or tangential. Instead, they pose a serious threat to user-centric e-government service provision success, which warrants further research in the following three areas: (1) the detection of other types of conflicts that were not found in the existing literature; (2) the evidence-based identification of causal relationships between prevalent issues in service delivery environments and these conflicts; and (3) the elaboration and testing of mitigating measures that can alleviate or remove the conflicts themselves, or their outcome.

Our proposed future research also hints at the main limitations of this study. We currently focus primarily on academic literature within particular disciplines and do not consider grey literature, industry reports, or case studies. This selection of specific criteria may bias our analysis. Moreover, expanding the range of sources for analysis could deliver results on emerging conflicts. These results may also support the establishment of causation between conflicts and issues beyond abduction. A more systematic approach to causation may also deliver insights into the nature of our influencing factors. That is, if they are conflict sources, aggravating factors, or have other types of influencing relationships. In addition, our research is limited with regard to deriving practical implications for the public, as the literature analysis focuses on synthesizing existing research rather than prescribing actions or policies. Finally, a systematic literature review is always tied to a predefined scope. While our research approaches the concept of user-centricity from a broad angle, thereby increasing the potential for generalization of our findings, it inevitably limits the potential to provide specific recommendations or instructions for practitioners to a specific problem, context, or technology.

CRediT authorship contribution statement

Linda Weigl: Writing – review & editing, Writing – original draft, Project administration, Methodology, Formal analysis, Data curation, Conceptualization. **Tamara Roth:** Conceptualization, Writing – review & editing, Writing – original draft, Formal analysis. **Alexandre Amard:** Conceptualization, Writing – original draft, Visualization, Formal analysis, Data curation. **Liudmila Zavolokina:** Conceptualization, Writing – original draft, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors would like to extend their sincere gratitude to Hanna Marxen and Tom Barbereau for their review, insights, and encouragement on crystallizing their research into this manuscript, and their contribution to a conference publication outlining the preliminary results of this research project, upon which this manuscript builds.This research was funded by the Luxembourg National Research Fund (FNR) and PayPal PEARL (grant reference 13342933), as well as through the University of Zurich and the Digital Society Initiative under the DIZH postdoc fellowship of Liudmila Zavolokina. For the purpose of open access, the authors have applied a Creative Commons Attribution 4.0 International (CC BY 4.0) license to any author accepted manuscript version arising from this submission.

Appendix A. Appendix

Table 10
List of coded publications during the literature review process and their main characteristics.

Item Type	Publ. Year	Author	Title	Publication Title	Scope of analysis	Research type
Conference article	2013	Abdellatif, Ahmed; Ben Amor, Nahla; Mellouli, Sehl	An intelligent framework for e-government personalized services	Proceedings of the 14th Annual International Conference on Digital Government Research	Worldwide	Design research
Peer-reviewed journal article	2012	Alomari, Mohammad; Woods, Peter; Sandhu, Kuldeep	Predictors for e-government adoption in Jordan: Deployment of an empirical evaluation based on a citizen-centric approach	Information Technology & People	Jordan	Quantitative
Peer-reviewed journal article	2013	Andersen, Lotte Bøgh; Jørgensen, Torben Beck; Kjeldsen, Anne Mette; Pedersen, Lene Holm; Vrangbæk, Karsten	Public Values and Public Service Motivation: Conceptual and Empirical Relationships	The American Review of Public Administration	Denmark	Quantitative
Peer-reviewed journal article	2018	Aschhoff, Nils; Vogel, Rick	Value conflicts in co-production: governing public values in multi-actor settings	International Journal of Public Sector Management	Germany	Qualitative
Peer-reviewed journal article	2022	Bason, Christian; Austin, Robert D.	Design in the public sector: Towards a human centred model of public governance	Public Management Review	Worldwide	Qualitative

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Table 10 (*continued*)

Item Type	Publ. Year	Author	Title	Publication Title	Scope of analysis	Research type
Peer-reviewed journal article	2021	Berg, Janne; Lindholm, Jenny; Högväg, Joachim	How do we know that it works? Designing a digital democratic innovation with the help of user-centered design	Information Polity	Finland	Quantitative
Conference article	2013	Berntzen, Lasse	Citizen-centric eGovernment Services	Proceedings of CENTRIC 2013: The Sixth International Conference on Advances in Human-oriented and Personalized Mechanisms, Technologies, and Services	Europe	Quantitative
Peer-reviewed journal article	2021	Bokayev, Baurzhan; Davletbayeva, Zhuldyz; Amirova, Aigerim; Rysbekova, Zhanar; Torebekova, Zulfiya; Jussupova, Gul	Transforming *E*-government in Kazakhstan: A Citizen-Centric Approach	The Innovation Journal: The Public Sector Innovation Journal	Kazakhstan	Quantitative
Peer-reviewed journal article	2013	Borah, Sri Keshabananda	Implementation of citizen-centric e-Governance projects in Assam	IOSR Journal of Humanities and Social Science	India	Qualitative
Peer-reviewed journal article	2021	Brown, Prudence R.	Public Value Measurement vs. Public Value Creating Imagination – the Constraining Influence of Old and New Public Management Paradigms	International Journal of Public Administration	Worldwide	Qualitative
Peer-reviewed journal article	2014	Bryson, John M.; Crosby, Barbara C.; Bloomberg, Laura	Public Value Governance: Moving Beyond Traditional Public Administration and the New Public Management	Public Administration Review	USA	Qualitative
Peer-reviewed journal article	2021	Clark, Jill K.	Public Values and Public Participation: A Case of Collaborative Governance of a Planning Process	The American Review of Public Administration	USA	Qualitative
Peer-reviewed journal article	2014	Clarke, Amanda; Margetts, Helen	Governments and Citizens Getting to Know Each Other? Open, Closed, and Big Data in Public Management Reform: Open, Closed, and Big Data in Public Management Reform	Policy & Internet	Canada; United Kingdom; USA	Qualitative
Peer-reviewed journal article	2012	Cordella, Antonio; Bonina, Carla M.	A public value perspective for ICT enabled public sector reforms: A theoretical reflection	Government Information Quarterly	Worldwide	Qualitative
Book chapter	2018	David, Nina	Democratizing Government: What We Know About E-Government and Civic Engagement	International E-Government Development	Worldwide	Qualitative
Peer-reviewed journal article	2016	De Graaf, Gjalt; Huberts, Leo; Smulders, Remco	Coping With Public Value Conflicts	Administration & Society	Worldwide	Qualitative
Peer-reviewed journal article	2016	Degbelo, Auriol; Granell, Carlos; Trilles, Sergio; Bhattacharya, Devanjan; Casteleyn, Sven; Kray, Christian	Opening up Smart Cities: Citizen-Centric Challenges and Opportunities from GIScience	ISPRS International Journal of Geo-Information	Worldwide	Qualitative
Conference article	2019	*E. Luna*, Dolores; Picazo-Vela, Sergio; Ramon Gil-Garcia, J.; Puron-Cid, Gabriel; Sandoval-Almazan, Rodrigo; F. Luna-Reyes, Luis	Public Value Creation through Digital Service Delivery from a Citizens' Perspective	Proceedings of the 20th Annual International Conference on Digital Government Research	Mexico	Qualitative
Peer-reviewed journal article	2016	Ebbers, Wolfgang E.; Jansen, Marloes G.M.; Van Deursen, Alexander J.A.M.	Impact of the digital divide on e-government: Expanding from channel choice to channel usage	Government Information Quarterly	Netherlands	Quantitative
Conference article	2017	Frohlich, Karin	Evaluating the effects of e-government initiatives on citizen-centric goals at selected Namibian Government Ministry	2017 IST-Africa Week Conference (IST-Africa)	Namibia	Qualitative
Peer-reviewed journal article	2015	Gable, Matt	Efficiency, Participation, and Quality: Three Dimensions of *E*-Government?	Social Science Computer Review	Worldwide	Qualitative
Conference article	2016	Garcia-Garcia, Luz Maria	User Centric e-Government: the Modernization of the National Institute of Migration at Mexico's Southern Border	Proceedings of the 9th International Conference on Theory and Practice of Electronic Governance	Mexico	Qualitative
Conference article	2014	Garcia-Garcia, Luz Maria; Gil-Garcia, J. Ramon; Gómez, Victor	Citizen-centered e-government: towards a more integral approach	Proceedings of the 15th Annual International Conference on Digital Government Research	Worldwide	Qualitative

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Table 10 (*continued*)

Item Type	Publ. Year	Author	Title	Publication Title	Scope of analysis	Research type
Conference article	2015	Garcia-Garcia, Luz Maria; Gil-Garcia, J. Ramon; Gómez, Victor	Citizen centered e-government?: the case of National Migration Institute in the Southern Mexican border	Proceedings of the 16th Annual International Conference on Digital Government Research	Mexico	Qualitative
Peer-reviewed journal article	2017	Ghosh Roy, Saikat; Upadhyay, Parijat	Does e-readiness of citizens ensure better adoption of government's digital initiatives? A case based study	Journal of Enterprise Information Management	India	Mixed
Peer-reviewed journal article	2015	Gjermundrød, Harald; Dionysiou, Ioanna	A conceptual framework for configurable privacy-awareness in a citizen-centric eGovernment	Electronic Government, an International Journal	Worldwide	Design research
Peer-reviewed journal article	2013	Grube, Dennis	In Search of Society? The Limitations of Citizen-Centred Governance	The Political Quarterly	Worldwide	Qualitative
Peer-reviewed journal article	2016	Gupta, Kriti Priya; Bhaskar, Preeti; Singh, Swati	Critical Factors Influencing *E*-Government Adoption in India: An Investigation of the Citizens' Perspectives	Journal of Information Technology Research	India	Quantitative
Peer-reviewed journal article	2016	Gupta, Kriti Priya; Singh, Swati; Bhaskar, Preeti	Citizen adoption of e-government: a literature review and conceptual framework	Electronic Government, an International Journal	India	Mixed
Peer-reviewed journal article	2018	Gupta, Kriti Priya; Singh, Swati; Bhaskar, Preeti	Citizens' perceptions on benefits of e-governance services	International Journal of Electronic Governance	India	Quantitative
Conference article	2015	Haider, Muhammad; Khan, Muhammad Umer; Farooq, Sumbal	e-Government: An empirical analysis of current literature	2015 International Conference on Information and Communication Technologies (ICICT)	Worldwide	Qualitative
Conference article	2020	Hashim, Kamarul Faizal; Hashim, Nor Laily; Ismail, Solahudin; Miniaoui, Sami; Atalla, Shadi	Citizen Readiness to Adopt the New Emerging Technologies in Dubai Smart Government Services	2020 6th International Conference on Science in Information Technology (ICSITech)	UAE	Quantitative
Peer-reviewed journal article	2012	Hung, Mei Jen	Building Citizen-centred E-government in Taiwan: Problems and Prospects: Building Citizen-centred E-government in Taiwan	Australian Journal of Public Administration	Taiwan	Qualitative
Peer-reviewed journal article	2019	Ingrams, Alex	Public Values in the Age of Big Data: A Public Information Perspective: Public Values in the Age of Big Data	Policy & Internet	Germany; Netherlands	Qualitative
Peer-reviewed journal article	2018	Janssen, Marijn; Helbig, Natalie	Innovating and changing the policy-cycle: Policy-makers be prepared!	Government Information Quarterly	Worldwide	Qualitative
Peer-reviewed journal article	2015	Jho, Whasun; Song, Kyong Jae	Institutional and technological determinants of civil e-Participation: Solo or duet?	Government Information Quarterly	Worldwide	Quantitative
Conference article	2013	Kamaruddin, Kamalia Azma; Noor, Nor Laila Md	Citizen-driven model in citizen-centric t-government	Proceedings of the 7th International Conference on Theory and Practice of Electronic Governance	Worldwide	Qualitative
Peer-reviewed journal article	2021	Kassen, Maxat	Understanding decentralized civic engagement: Focus on peer-to-peer and blockchain-driven perspectives on e-participation	Technology in Society	Finland; France; Germany	Qualitative
Peer-reviewed journal article	2021	König, Pascal D.	Citizen-centered data governance in the smart city: From ethics to accountability	Sustainable Cities and Society	Worldwide	Qualitative
Peer-reviewed journal article	2012	Kotamraju, Nalini P.; Van Der Geest, Thea M.	The tension between user-centred design and e-government services	Behavior & Information Technology	Netherlands	Qualitative
Peer-reviewed journal article	2019	Kumar, Avanish	Citizen-centric model of governmental entrepreneurship: Transforming public service management for the empowerment of marginalized women	Transforming Government: People, Process and Policy	India	Qualitative
Peer-reviewed journal article	2021	Kyakulumbye, Stephen; Pather, Shaun; Jantjies, Mmaki	Towards design of citizen centric e-government projects in developing country context: the design-reality gap in Uganda	International Journal of Information Systems and Project Management	Uganda	Qualitative

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Table 10 (*continued*)

Item Type	Publ. Year	Author	Title	Publication Title	Scope of analysis	Research type
Conference article	2015	Lappas, Georgios; Triantafillidou, Amalia; Kleftodimos, Alexandras; Yannas, Prodromos	Evaluation framework of local e-government and e-democracy: A citizens' perspective	2015 IEEE Conference on e-Learning, e-Management and e-Services (IC3e)	Greece	Quantitative
Peer-reviewed journal article	2021	Larsson, Karl Kristian	Digitization or equality: When government automation covers some, but not all citizens	Government Information Quarterly	Norway	Qualitative
Conference article	2020	Liva, Giovanni; Codagnone, Cristiano; Misuraca, Gianluca; Gineikyte, Vaida; Barcevicius, Egidijus	Exploring digital government transformation: a literature review	Proceedings of the 13th International Conference on Theory and Practice of Electronic Governance	Worldwide	Qualitative
Peer-reviewed journal article	2023	Madan, Rohit; Ashok, Mona	AI adoption and diffusion in public administration: A systematic literature review and future research agenda	Government Information Quarterly	Worldwide	Qualitative
Peer-reviewed journal article	2014	Mariën, Ilse; A. Prodnik, Jernej	Digital inclusion and user (dis) empowerment: a critical perspective	Digital Policy, Regulation and Governance	Worldwide	Qualitative
Book chapter	2018	Mossey, Sean; Manoharan, A.P.; Bennett, Lamar Vernon	New Approaches, Methods, and Tools in Urban *E*-Planning	New Approaches, Methods, and Tools in Urban E-Planning:	USA	Mixed
Peer-reviewed journal article	2013	Mostafa, Mohamed M.; El-Masry, Ahmed A.	Citizens as consumers: Profiling e-government services' users in Egypt via data mining techniques	International Journal of Information Management	Egypt	Quantitative
Peer-reviewed journal article	2012	Nabatchi, Tina	Putting the "Public" Back in Public Values Research: Designing Participation to Identify and Respond to Values	Public Administration Review	Worldwide	Qualitative
Peer-reviewed journal article	2018	Nabatchi, Tina	Public Values Frames in Administration and Governance	Perspectives on Public Management and Governance	Worldwide	Qualitative
Book chapter	2018	Osborne, Stephen P.; Strokosch, Kirsty; Radnor, Zoe	Co-Production and the Co-Creation of Value in Public Services	Co-Production and Co-Creation	Worldwide	Qualitative
Peer-reviewed journal article	2014	Osman, Ibrahim H.; Anouze, Abdel Latef; Irani, Zahir; Al-Ayoubi, Baydaa; Lee, Habin; Balcı, Asım; Medeni, Tunç D.; Weerakkody, Vishanth	COBRA framework to evaluate e-government services: A citizen-centric perspective	Government Information Quarterly	Turkey	Mixed
Peer-reviewed journal article	2019	Panagiotopoulos, Panos; Klievink, Bram; Cordella, Antonio	Public value creation in digital government	Government Information Quarterly	Worldwide	Qualitative
Peer-reviewed journal article	2014	Pang, Min-Seok; Lee, Gwanhoo; DeLone, William H	IT Resources, Organizational Capabilities, and Value Creation in Public-Sector Organizations: A Public-Value Management Perspective	Journal of Information Technology	Worldwide	Qualitative
Peer-reviewed journal article	2019	Park, Sora; Humphry, Justine	Exclusion by design: intersections of social, digital and data exclusion	Information, Communication & Society	Australia	Qualitative
Conference article	2020	Parra, Raul Diaz; Saenz, Christian Fernando Libaque	The Influence of Digital Transformation of the Peruvian Public Sector on Citizen Trust	AMCIS 2020 Proceedings	Peru	Quantitative
Peer-reviewed journal article	2020	Pérez-Morote, Rosario; Pontones-Rosa, Carolina; Núñez-Chicharro, Montserrat	The effects of e-government evaluation, trust and the digital divide in the levels of e-government use in European countries	Technological Forecasting and Social Change	Europe	Quantitative
Peer-reviewed journal article	2013	Persaud, Ajax; Persaud, Priya	Rethinking *E*-Government Adoption: A User-Centered Model	International Journal of Electronic Government Research	Canada	Mixed
Book chapter	2013	Purao, Sandeep; Seng, Teo Chin; Wu, Alfred	Modeling Citizen-Centric Services in Smart Cities	Conceptual Modeling	Worldwide	Formal
Conference article	2013	Purao, Sandeep; Wu, Alfred	Towards Values-inspired Design: The Case of Citizen-Centric Services	Proceedings of the Thirty Fourth International Conference on Information Systems, Milan 2013	Worldwide	Formal
Peer-reviewed journal article	2015	Rose, Jeremy; Persson, John Stouby; Heeager, Lise Tordrup; Irani, Zahir	Managing e-Government: value positions and relationships	Information Systems Journal	Worldwide	Qualitative

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Table 10 (*continued*)

Item Type	Publ. Year	Author	Title	Publication Title	Scope of analysis	Research type
Peer-reviewed journal article	2016	Scott, Murray; DeLone, William; Golden, William	Measuring eGovernment success: a public value approach	European Journal of Information Systems	USA	Quantitative
Peer-reviewed journal article	2019	Sepasgozar, Samad M.E.; Hawken, Scott; Sargolzaei, Sharifeh; Foroozanfa, Mona	Implementing citizen centric technology in developing smart cities: A model for predicting the acceptance of urban technologies	Technological Forecasting and Social Change	Iran	Mixed
Peer-reviewed journal article	2016	Sharma, Ravi; Fantin, Arul-Raj; Prabhu, Navin; Guan, Chong; Dattakumar, Ambica	Digital literacy and knowledge societies: A grounded theory investigation of sustainable development	Telecommunications Policy	Finland; Hong Kong; Qatar; New Zealand; Singapore	Qualitative
Peer-reviewed journal article	2016	Sigwejo, Annastellah; Pather, Shaun	A Citizen-Centric Framework For Assessing E-Government Effectiveness	The Electronic Journal of Information Systems in Developing Countries	Tanzania	Qualitative
Peer-reviewed journal article	2015	Sorn-in, Kanda; Tuamsuk, Kulthida; Chaopanon, Wasu	Factors affecting the development of e-government using a citizen-centric approach	Journal of Science & Technology Policy Management	Thailand	Mixed
Book chapter	2014	Synnes, Kåre; Kranz, Matthias; Rana, Juwel; Schelén, Olov; Nilsson, Michael	User-Centric Social Interaction for Digital Cities	Creating Personal, Social, and Urban Awareness through Pervasive Computing:	Worldwide	Qualitative
Peer-reviewed journal article	2013	Thomas, John Clayton	Citizen, Customer, Partner: Rethinking the Place of the Public in Public Management	Public Administration Review	Worldwide	Qualitative
Conference article	2012	Tsohou, Aggeliki; Lee, Habin; Irani, Zahir; Weerakkody, Vishanth; Osman, Ibrahim; Latif, Abdel Anuz; Medeni, Tunc	Evaluating e-government services from a citizens' perspective: a reference process	European, Mediterranean & Middle Eastern Conference on Information Systems 2012	Europe	Design research
Conference article	2017	Twizeyimana, Jean Damascene	User-centeredness and usability in e-government: a reflection on a case study in Rwanda	Proceedings of the Internationsl Conference on Electronic Governance and Open Society: Challenges in Eurasia	Rwanda	Qualitative

Table 11
Value conflicts and conflict sources found in literature.

	User focus-representation	User focus-pluralism	User involvement-accountability	User involvement-inclusiveness
Decision-making Dominance	Grube, 2013; Ingrams, 2019; Kassen, 2021; Kotamraju & van der Geest, 2012; Park & Humphry, 2019		de Graaf et al., 2014; Ingrams, 2019; Kotamraju & van der Geest, 2012; Mossey et al., 2018	David, 2018; Kotamraju & van der Geest, 2012; Mariën & Amon Prodnik, 2014
Degree of Participation	Berg et al., 2021; Grube, 2013; Kassen, 2021; Kotamraju & van der Geest, 2012; Nabatchi, 2012	Aschhoff & Vogel, 2018; Gupta, Singh, & Bhaskar, 2016; Kotamraju & van der Geest, 2012; Mariën & Amon Prodnik, 2014	Aschhoff & Vogel, 2018; Berg et al., 2021; de Graaf et al., 2014; König, 2021; Kotamraju & van der Geest, 2012; Mossey et al., 2018	David, 2018; König, 2021; Kotamraju & van der Geest, 2012; Mariën & Amon Prodnik, 2014
Resource Deficit	Kotamraju & van der Geest, 2012; Kyakulumbye et al., 2019; Sigwejo & Pather, 2016	Berg et al., 2021; Bokayev et al., 2021; Gupta et al., 2018; Gupta, Singh, & Bhaskar, 2016; Kotamraju & van der Geest, 2012; Larsson, 2020; Mariën & Amon Prodnik, 2014; Park & Humphry, 2019	Kotamraju & van der Geest, 2012; Mossey et al., 2018	Berg et al., 2021; David, 2018; König, 2021; Kotamraju & van der Geest, 2012; Mariën & Amon Prodnik, 2014; Park & Humphry, 2019
Establishment-Innovation	de Graaf et al., 2014; Grube, 2013; Ingrams, 2019; Kassen, 2021; Kotamraju & van der Geest, 2012; Miniaoui et al., 2020	Aschhoff & Vogel, 2018; Brown, 2021; Cordella & Bonina, 2012; de Graaf et al., 2014; Kotamraju & van der Geest, 2012; Mariën & Amon Prodnik, 2014	Aschhoff & Vogel, 2018; Bason & Austin, 2022; de Graaf et al., 2014; Grube, 2013; Ingrams, 2019; Kotamraju & van der Geest, 2012; Mossey et al., 2018	Clark, 2021; Kotamraju & van der Geest, 2012; Mariën & Amon Prodnik, 2014
Multistakeholder	Ingrams, 2019; Kassen, 2021; Kotamraju & van der Geest, 2012; Nabatchi, 2012; Sorn-in et al., 2015	Aschhoff & Vogel, 2018; Kotamraju & van der Geest, 2012; Scott et al., 2016	Ingrams, 2019	

Table 12
Codebook.

Main code category	Sub-code category	Sub-code category
	Degree of participation	
	Multistakeholder issue	
User-values conflict sources	Establishment-innovation tension	
	Resource deficit	
	Decision-making dominance	
User-values overlap		
	ICT infrastructure	
	Role of new media	
	Regulatory policy and governance	
Knowledge society	Political vision	
	Human capital development	
	Education	
	Funding	
	Government process change	
	Coordination	
Facilitating conditions	Multichannel delivery of e-government	
	Access limitation	
	Infrastructure	
	Availability of data	
	Influence	
	Citizen disinterest	
	Networks	
Collaborative governance	Deliberation	
	Dialogue	
	Co-design	
		Policy-making
		Challenges, barriers and failures
		E-governance
	E-government	Infrastructure
		Success
Government		Risks
		Benefits
		Coordination
	Multiple Stakeholders	Interaction
		Dispute resolution
	Institutionalized processes	
	User-centered design	
	Value-infused design choices	
	Proactivity	
	Democracy	
	Inclusiveness	
	Performance	
	Productivity	
	Durability	
	Compliance	
	Engagement	
	Service quality	
	Efficiency	
	Political neutrality	
	Transparency	
	Trust	
	Accountability	Accountability to the public
		Accountability to government
	Cost savings	
	Equality	
Design choices	Responsiveness	
	Representation	
	Participation	
	Effectiveness	
	Justice	
	Legitimacy	
	Innovation	
	Equity	
	Confidence	
	Accessibility	
	Reliability	
	Fairness	
	Diversity	
	Flexibility	
	Sustainability	
	Economy / parsimony	
	Privacy	
	Security	
	Proper use of public funds	

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Table 12 (*continued*)

Main code category	Sub-code category	Sub-code category
	Responsibility	
		Informed citizens
		Expected skills
	Skills	Awareness of existing system
		Knowledge
		Content availability and literacy
		Interoperability
Citizens	Needs	Needs, abilities and expectations
		Usability, functionality and accessibility
		Citizen satisfactions
		Ease of use
		Perceived usefulness
	Adoption	Citizen readiness
		Benefits
		Intention to use
Digital divide		
	System personalization	
User-centricity	User involvement	
	User focus	

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