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Unpacking the citizen role in digital government maturity models

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Abstract

Purpose – This study aims to examine and illustrate the landscape of citizens' roles in digital government maturity models (DGMM) based on public value positions. It seeks to answer: How are citizens' roles conceptualized and integrated into DGMM?

Design/methodology/approach – This study uses an interpretive qualitative content analysis. This study examined 18 DGMMs, analysing both their explicit and implicit representations of citizens. Using Distel and Lindgren's (2023) extended e-government value position framework as a theoretical lens, the authors positioned the role of citizens within these models.

Findings – The study reveals that DGMMs vary in how they view citizens' roles. While all four value ideals acknowledge citizens, models emphasizing efficiency and professionalism tend to regard them as passive participants, whereas service and engagement ideals promote more active and participatory roles.

Research limitations/implications – The analysis examines 18 DGMMs. While diverse, it may not reflect all emerging models or regional variations. Citizen role interpretation involves some subjectivity, despite collaborative efforts for consistency.

Practical implications – The findings provide a framework for understanding citizens' roles through different value positions, supporting the public sector in strengthening its citizen focus.

Social implications – The study offers insights for national and local levels on including citizens in digital transformation, contributing to greater awareness of their diverse roles in digital government maturity.

Originality/value – This study presents a novel synthesis of citizens' roles within the extended public value framework, opening new avenues for research and policy development.

Keywords Digital government, Citizen, Value position, Digital government maturity models, Citizen-centricity

Paper type Research paper

1. Introduction

In the public sector, digital transformation (DT) must respond to evolving demands from citizens (Kafel *et al.*, 2021; Norling *et al.*, 2022). Governments also develop digital solutions to address social, economic and political challenges (Lindgren and van Veenstra, 2018; Meyerhoff Nielsen, 2020; Nerima and Ralyté, 2021). Moreover, governments are expected to appear transparent in their resource management and service delivery (Meyerhoff Nielsen, 2016). Therefore, policymakers, government executives, researchers, etc. need to understand

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and anticipate the intricate changes DT brings forward and the necessity of a prolonged process of change (Janowski, 2015; Lindgren and van Veenstra, 2018). DT is a holistic effort to redesign core government processes and services, culminating in a comprehensive review of policies, current processes and user needs. This process results in a complete overhaul of existing services and the creation of new digital solutions. Key outcomes include improved user focus, innovative service delivery and broader accessibility (Mergel *et al.*, 2019).

As DT evolves, emerging technologies such as artificial intelligence (AI) increasingly act as key enablers of modern public sector innovation. These technologies enhance governments' capacity to analyze data, automate administrative processes and deliver more personalized and efficient digital services, thereby strengthening the connection between technological development and citizen-oriented public value (Zuiderwijk *et al.*, 2021). These technological advancements reinforce the broader development of digital government, which seeks to integrate new capabilities into public administration and redefine how public value is created (Janowski, 2015; Mergel *et al.*, 2019; Zuiderwijk *et al.*, 2021). Digital government is regarded as a facilitator for the transformation of public administration. Despite being a costly and gradual process, digitalization can play a crucial role in addressing some of the welfare system's challenges (SOU, 2020; p. 8). Frequently, digitalizing public services is perceived as the primary method to generate public value (Lindgren and van Veenstra, 2018). To manage DT, digital maturity models (DMM) have been suggested, based on the belief that an organization's digital maturity is linked to its performance. Digital government maturity models (DGMM) help public organizations assess digital maturity, guide further development and enable benchmarking among institutions (Hujran *et al.*, 2023a; Nerima and Ralyté, 2021).

Meyerhoff Nielsen (2020) pointed out that criticism has been raised against DGMMs for neglecting the viewpoints of citizens. Chohan *et al.* (2020) argue that existing maturity models also face criticism because of several pragmatic limitations and DGMMs often conclude in the integration stage, neglecting public value creation and citizen involvement. The DGMMs typically focus on the supply side, i.e. technical and organizational aspects, lacking input from domain experts and citizen engagement in the development process.

In a democratic society, citizens should influence decisions affecting their local environment and daily lives (Swedish Association of Local Authorities and Regions, 2021). In Sweden, the aim of digitalization is to create "an easier everyday life for citizens" (The Swedish Government, 2024). Policies and strategies strongly emphasize the citizen perspective, yet this often fails in practice and citizens' needs are easily forgotten (Axelsson *et al.*, 2010). Interaction between citizens and public officials, though central, has received little attention. Studies on the diffusion of e-government and citizens' adoption of digital services often overlook context, diversity and significance (Lindgren *et al.*, 2019). Axelsson *et al.* (2010) stressed that citizen-centric ambitions can no longer be neglected, and Axelsson *et al.* (2013) highlighted the need to consider both internal and external stakeholders. As Mergel *et al.* (2019, p. 12) note, "digital transformation in the public sector is not a task for administrations alone." Citizens should act as active partners in developing and delivering digital public services.

DT requires public organizations to adopt an outside-in perspective, view operations from the citizens' perspective and start with the needs of the citizens rather than focusing solely on internal organizational processes. As DT progresses, citizen expectations of the public sector increase, necessitating adaptation and development by public organizations to meet these new demands (Hujran *et al.*, 2023a). However, earlier criticism has highlighted their inability to incorporate the viewpoints of citizens (Meyerhoff Nielsen, 2020).

Citizens are key stakeholders and the main beneficiaries of public sector digitalization, yet their roles in e-government are often described only in broad terms, leaving their specific roles within e-government unclear. These varied interpretations shape research assumptions and the perceived relationship between citizens and public organizations. While ICT is viewed as beneficial, detailed analyses of citizens' specific roles and impacts remain limited (Distel and Lindgren, 2023).

In Distel and Lindgren's (2023) extended version of Rose *et al.*'s framework for e-government value positions, four value ideals are incorporated: the professionalism ideal, the efficiency ideal, the service ideal and the engagement ideal. Each value position represents a unique perspective on the role of the citizen. This framework can serve as a lens to analyze how DGMMs address the role of citizens and which roles underpin the values being represented. The extended framework makes the citizen's role more visible and helps interpret how it is shaped by the different value positions.

Waara (2025) showed that DGMMs vary in how they address citizens. Some models explicitly integrate them, while others only refer to them as "users" or "customers." Dimension-based models often overlook citizens, whereas stage-based models include them more consistently. Across various stages and dimensions, citizens appear in multiple roles, such as metrics, enablers, challengers or barriers, but they are assigned differing importance and visibility. Despite a global shift toward citizen-centered governance, many DGMMs still emphasize technical and organizational factors, often neglecting meaningful citizen engagement. As noted by Meyerhoff Nielsen (2016), the citizen perspective is often underrepresented in maturity models, potentially hindering their effectiveness in promoting inclusive governance.

In response, we aim to elaborate on how current DGMMs address the role of citizens, both explicitly and implicitly, using Distel and Lindgren's extended version of Rose *et al.*'s framework for e-government value positions. Our goal is to deepen the understanding of the citizen's role in DGMMs through the lens of different value positions in e-government. Specifically, we seek to answer the following research question: How are citizens' roles conceptualized and integrated into DGMM?

The remainder of this paper is structured as follows. Section 2 outlines the key concepts underpinning this study, including digital government maturity, citizen-centricity and the public value framework used for analysis. Section 3 presents the research strategy and the process adopted for examining the selected DGMM. Section 4 reports the results of the analysis, structured according to the four public value positions and their analytical dimensions. Section 5 discusses the findings in relation to previous research and highlights implications for theory and practice. Finally, Section 6 concludes the paper by summarizing the main contributions, limitations and directions for future research.

2. Key concepts

2.1 Digital government and maturity

A key promise of the digital revolution is its ability to modernize government, enhance efficiency and improve responsiveness to citizens' needs (Al-Khouri, 2011). Digital government has evolved from the use of Information and Communication Technology (ICT) in administration to the broader impact of digital technologies on governance and management. Various technologies now support citizens, service users, officials and political leaders at all levels (Abu Bakar *et al.*, 2020). Today, governments have more opportunities than ever to serve their citizens. Emerging tools, such as data mining, machine learning, sensors and automation, can help achieve the core goals of digital government: greater efficiency, transparency, seamless services and shorter lead times (Lindgren *et al.*, 2019;

Hujran *et al.*, 2023a; Zuiderwijk *et al.*, 2021). For citizens, digital services can make everyday life easier, provide convenient access to government and foster satisfaction and trust (Al-Khouri, 2011). Citizens now expect streamlined processes through digitalization (McKinsey, 2016), creating growing demand for a shift from agency-centric to citizen-centric approaches (Abu Bakar *et al.*, 2020; Eggers and Bellman, 2015).

Implementing digital services must be accompanied by adapting organizational structures and processes (Pittaway and Montazemi, 2020). Two criteria are crucial for success: 24/7 availability and easy accessibility, without which services risk failure (Alhomod *et al.*, 2012). OECD (2014) recommends strategies that strengthen ties between governments, citizens and businesses, shifting from government-led models – where needs are anticipated – to citizen-driven models – where needs are co-defined. Digital government has now entered a second phase of transformation, with governments acting as both catalyst and enabler (Scholl, 2020).

Maturity in digital governance refers to the degree of implementation, assessed through indicators, principles and characteristics (Jussupova *et al.*, 2019). Such assessments require specific tools, typically maturity models (Nerima and Ralyté, 2021). Over 50 years of research, numerous models have been proposed, resulting in a wide range of synonymous terms such as framework, stage model and change model (Fath-Allah *et al.*, 2014; Thordsen and Bick, 2023).

Digital maturity reflects an organization's status in its DT journey, including operational changes and acquired capabilities (Thordsen and Bick, 2023). It measures the ability to leverage digitalization's benefits (Magnusson and Lindroth, 2023); organizations with low maturity gain little return on their investments (Thordsen and Bick, 2023).

2.2 Digital maturity models and digital government maturity models

Since the introduction of the first DMM in 2011, the topic has received significant global interest, sparking both enthusiasm and debate among managers and academics alike (Thordsen and Bick, 2023). Since 2013, a variety of DGMMs have been developed, outlining progression toward digital maturity in general (Hujran *et al.*, 2023a). DMMs vary in architecture yet share core similarities. (Thordsen and Bick, 2023).

DMMs are usually stage-based or dimension-based (Hujran *et al.*, 2023a). Stage models often include four to six stages, while dimension models average six dimensions, such as technology, culture, processes, strategy and management. Stage models typically begin with digital strategy, progressing to culture, leadership and user-centeredness in later ones (Thordsen and Bick, 2023). Recently, focus has shifted from stage-based to dimension-based models, which emphasize interconnected phases progressing simultaneously (Hujran *et al.*, 2023a). Assessing digital maturity is essential, as challenges differ by sector and organization, often requiring adapted models (Nerima and Ralyté, 2021). DGMMs are valuable tools for governments to evaluate ICT capacity to improve performance (Renteria *et al.*, 2019; Jussupova *et al.*, 2019). They are also helpful in developing strategies and action plans and improving performance and public value (Abu Bakar *et al.*, 2020).

However, maturity models have been criticized for being oversimplified, universal, linear and for having a technology-focused approach to development. They also lack robust theoretical underpinnings and fail to incorporate the viewpoints of citizens (Meyerhoff Nielsen, 2020). The practical application of DGMMs does not consistently provide a reliable determination of what stage of digitalization the public administration has reached, due to potential inaccuracies in parameters and indicators (Jussupova *et al.*, 2019).

2.3 Citizen-centricity

In digital government research, citizens appear as a central unit of analysis and are treated as key stakeholders who receive the most benefits from public sector digitalization. For example, the human-centric approach was suggested and demonstrated more than two decades ago, suggesting a focus on life-events and "one-stop government" as a basis for organizing digital services in the public sector, including municipalities (Vintar *et al.*, 2002; Wimmer, 2002; Haraldsen *et al.*, 2004). The "one-stop government," however, appeared challenging to implement in practice (e.g. Schuppan and Köhl, 2017), and citizen-centricity has prevailed in the mainstream literature on e-government as a "new" paradigm or a "dream" (cf. Distel and Lindgren, 2023; Wouters *et al.*, 2023). Sundberg and Holmström (2024) recently argued, in line with the narratives of a paradigmatic shift from bureaucratic to citizen-centric, that digitalization is paving the way for a "new" era of governance within the public sector. The concept of citizen-centricity is integral to numerous, if not the majority of, government policies and agendas concerning digitalization and DT, and is often associated with such "new" paradigms (Sundberg and Holmström, 2024). However, researchers and practitioners understand citizens from various perspectives; Distel and Lindgren (2023) noted that the terms "citizens", "clients" and "customers" are used interchangeably and loosely, and that researchers refrain from clearly defining "citizen", thus studying citizens in a generic manner. When discussing user influence, we need to elaborate on which participatory activities are performed and how the participation is organized (Axelsson *et al.*, 2010).

Citizen participation in digital contexts is often superficial, limited to symbolic involvement where citizens are treated as customers rather than co-creators (Sundberg and Gidlund, 2022). Deeper participation is rare, and it is crucial to distinguish between types of engagement, as each offers various levels of influence. While participatory practices can build trust, improve design and enhance outcomes, they also bring challenges such as cost, time demands and unequal inclusion. Consequently, participatory activities remain less common than initiatives aimed at improving internal efficiency (Sundberg and Gidlund, 2022).

Previous research shows that the increased use of digital services in society leads to citizens demanding equivalent services from governments. Public actors need to be flexible and agile to meet these new demands because if they fail to do so, the public sector's relevance will be undermined (Magnusson and Lindroth, 2023). A recent example from Finland, concerning services involved when someone who has died, shows that inflexible bureaucracy and multiple service breakdowns within the public–private service network necessitated repeated contacts with various service providers, resulting in added stress for grieving family members (Hietala *et al.*, 2023). Accordingly, service disruptions and failures to fulfil citizens' needs can lead to severe consequences.

There is a limited understanding of the underlying dynamics of citizen-centricity as a phenomenon, even though significant efforts have been made to understand the provision of citizen-centric services and the efforts required to address underlying organizational issues and resistance. As the digital government is facing a paradigmatic shift from bureaucratic structures to a more citizen-centered orientation, there is a significant gap in the existing literature (Sundberg and Holmström, 2024). Understanding citizen-centricity as both a policy goal and a research construct is essential for linking DT efforts to the creation of genuine public value.

2.3 Public value

The concept of "public value" refers to the value created by the government through its provision of public services and related activities. It highlights the value delivered to citizens

through the government's efforts in offering these services. Public value encompasses more than just practical efficiency and effectiveness; it also involves citizens' personal stake in using public services provided by the government. Therefore, the creation of public value should be a key objective for governments and their organizations, as it enhances the overall effectiveness and benefits of governance (Chohan *et al.*, 2020).

2.3.1 Extended version of Rose et al.'s framework for e-government value positions. Building on Rose *et al.*'s (2015) framework, Distel and Lindgren (2023) expanded the concept of value positions in e-government by systematically incorporating the citizen's role. The framework shows how citizens are treated differently depending on guiding values, as each value position highlights some aspects while overshadowing others. Rose *et al.* identified four distinct positions – professionalism, efficiency, service and engagement – each rooted in public administration traditions and assumptions about e-government's purpose within a technological framework. Public values, understood as desired outcomes of IT for improving governance, can apply either solely to citizens or to both citizens and administrations. In the extended framework, the order of value positions shifts, with efficiency replacing professionalism as the starting point, representing the ideal with the least citizen integration and the most independent role in the e-government process, see Table 1. Summary of framework for e-government value positions by Distel and Lindgren (2023).

The Efficiency Ideal focuses on optimizing public administration to conserve resources. It emphasizes cost reduction, productivity and performance, viewing IT as a tool for automating processes to enhance efficiency. Under the efficiency ideal, citizens are seen as external actors with minimal interaction with public organizations. Ideally, they use self-services, automated or proactive, reducing the workload for public officials. Their role is limited to choosing a service or passively receiving automated outputs.

Table 1. Summary of framework for e-government value positions (Distel and Lindgren, 2023)

Dimensions	Efficiency ideal	Professionalism ideal	Service ideal	Engagement ideal
Public administration tradition	Lean, efficient administration minimizing waste gathered from taxpayers	Robust, rule-based administration ensuring legality and accountability	Service-oriented administration maximizing public value	Collaborative administration oriented toward public participation
Representative values	Value for money, cost reduction, productivity	Durability, equity, legality and accountability	Citizen centricity, service quality, responsiveness	Democracy, deliberation and participation
E-government purpose	Streamline and rationalize administration with digital tech	Provide secure digital records and support standardized procedures	Improve availability, accessibility and usability of services	Enable deliberation and co-production with citizens
Technological frame for IT	Automation to increase performance and reduce costs	Infrastructure ensuring secure and compliant record-keeping	Service-enabling technology improving quality and reach	Network facilitation supporting communication between government and citizens
Ideal view on citizens	Self-server: autonomous user of automated services	Citizen: rights-bearing actor contributing to the legal record	Service co-producer: partner shaping services and public value	Engaged agent: active participant in policy, service design and delivery

The Professionalism Ideal prioritizes an independent, consistent and law-based administration, ensuring accountability through public records. Key values include durability, equity, legality and accountability, with IT serving as an infrastructure to support administrative functions. Similarly, as the efficiency ideal, citizens remain external entities, but their role is defined by legal rights and obligations rather than minimizing interaction.

The Service Ideal aims to maximize government utility by improving public services. Key values include public service, citizen orientation, service quality and accessibility, with IT facilitating better service delivery. In the service ideal, citizens are active but external participants, co-producing services through interaction with public organizations.

The Engagement Ideal promotes civic participation in policymaking, aligning with democratic principles. Representative values include democracy, deliberation and participation, with IT enabling public interaction and co-production of policies. In the engagement ideal, citizens are integral to the public sector network, contributing to service design and co-production. They not only use public services but also create digital spaces for participation. E-government enables interaction not just with public organizations but also with other citizens, non-governmental organizations and businesses.

These four value positions differ significantly in how they perceive the role of citizens in relation to e-government. These differences are reflected in distinct technological frames for IT, leading to variations in how IT users are positioned. While efficiency and professionalism emphasize internal public administration operations, service and engagement focus on citizen involvement in service and policy design. Among them, the engagement ideal places the greatest emphasis on citizens as active participants in digital public service delivery. Despite some overlaps among the four positions, perspectives on the citizen's role in e-government remain divergent. Interestingly, the engagement ideal has received the least attention in both research and practice.

In practice, the four ideal citizen roles are rarely realized simultaneously. The efficiency ideal limits interaction to save resources, while the engagement ideal promotes active participation. The professionalism ideal stresses legal compliance, and the service ideal focuses on citizens' needs and experiences. Designing e-government solutions requires balancing efficiency, compliance and participation, as trade-offs often arise between economic and democratic values. These value positions shape how citizens' roles are defined in e-government research, where boundaries between roles remain fluid and overlapping.

3. Research strategy and process

To address the aim of this research, we conducted an interpretive qualitative content analysis in collaboration among the four authors (Krippendorff, 2004). The process began with Phase 1, Research question, followed by Phase 2, Text, in which we initiated the analysis by reviewing the 18 DGMMs identified in Waara's (2025) review, see Appendix 1. The DGMMs we analysed vary in both design and purpose. Some are structured as stage models, while others are dimension-based, and their intended purposes range from descriptive and prescriptive to comparative or holistic. The review included both practical applications and theoretical models. The DGMMs were developed for different scopes of application; some were designed for use across various countries, while others were specifically developed for implementation within the European Union. In certain cases, the geographical scope of application was not explicitly stated. The DGMMs span from 2012 to 2023. The review encompassed both academic (peer-reviewed) literature and non-peer-reviewed sources, commonly referred to as grey literature (i.e. secondary data sources).

In Phase 3, (Re)Articulation, we examined and interpreted the role of citizens within each DGMM, both explicitly and implicitly and how these roles are conceptualized and integrated

into each model. DGMMs analysed vary in both design and purpose. Some are structured as stage models, while others are dimension-based and their intended purposes range from descriptive and prescriptive to comparative or holistic. The review included both practical applications and theoretical models. The DGMMs were developed for different scopes of application; some were designed for use across various countries, while others were specifically developed for implementation within the European Union. In certain cases, the geographical scope of application was not explicitly stated. The DGMMs span from 2012 to 2023. The review encompassed both academic (peer-reviewed) literature and non-peer-reviewed sources, commonly referred to as grey literature (i.e. secondary data sources). Following this, we divided the DGMMs among the four authors, each with an academic background in e-government research. Each analyzer individually examined the role of citizens within the assigned models and highlighted relevant excerpts, which were then interpreted in relation to how these expressions reflected views of citizens within the model's concept of digital maturity.

In Phase 4, Interpretation, we viewed such excerpts in relation to Distel and Lindgren's (2023) extended value positions framework as a theoretical lens. This framework offered a structured approach for identifying and presenting the various citizen roles embedded in the DGMMs. Each relevant excerpt of text, interpreted to relate to a citizen role, was carefully analysed multiple times to interpret its contextual meaning within the model and to discern the primary intent behind both implicit and explicit references to citizens. After we could locate the excerpts in relation to the framework, we then also abstracted the interpretations to conceptual categories expressing the view on the citizen in relation to the analyzed dimension and conceptual category.

We then returned to Phase 3 and met to discuss each DGMM and the role of citizens within the models in detail. In collaboration with the other authors who had now also reviewed the remaining model texts we confirmed the relevance of the highlighted excerpts and the interpretations made by the primary analyst for each model. We then proceeded to Phase 4, where the analyst interpreted the identified excerpts related to citizen roles and integrated these roles into the framework of value positions and their analytical subcategories. As Distel and Lindgren (2023) argue, a citizen's role may fall into more than one category and we thus assigned each excerpt discussing a citizen's role to the category where the interpretive emphasis was strongest. This process involved two rounds of discussion before arriving at the final classification. As with any interpretive work, our interpretations varied at first; what one person perceives may differ from another's understanding. Therefore, conducting the analysis collaboratively was essential to ensure a more comprehensive and balanced interpretation. This process went on until all four authors agreed consensually on all potential interpretations of all the models and their excerpts.

Following the interpretation of citizens' roles in Phase 4, the findings were synthesized within the framework in Phase 5, Construction. It became evident that citizen roles are, indeed, perceived differently in particular DGMMs across the four value positions, revealing both gaps and areas where assumptions of citizen roles were most prominent. Finally, in Phase 6, Answer, these insights informed the subsequent discussion on the observed differences and their implications (see Figure 1).

4. Result

To explore how citizens are represented within DGMMs, we systematically analysed 18 DGMMs using the extended value position framework developed by Distel and Lindgren (2023). This framework distinguishes four public value positions, namely, efficiency, professionalism, service and engagement, each reflecting distinct assumptions about the

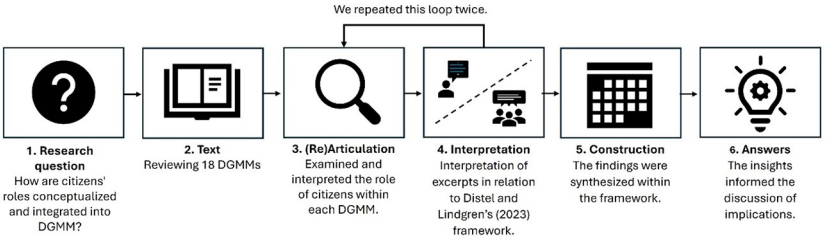

Figure 1. A six-step research process

purpose of e-government and the role of citizens. The results are structured across five analytical dimensions derived from the framework: public administration tradition, representative values, purpose of e-government, technological frame for IT and ideal view of the citizen. Table 2 presents the representation of DGMMs across ideals and dimensions.

Each dimension is examined across the four value positions, enabling a comparative interpretation of how citizens' roles are conceptualized and operationalized in existing maturity models. The findings are synthesized from both descriptive and normative elements of the DGMMs (see Appendix 2 for the analysis summary).

4.1 Public administration tradition

This dimension captures how administrative traditions shape the citizen's role across the four value positions in DGMMs.

Efficiency Ideal: Models aligned with this ideal emphasize modernization [M10], user-friendly service delivery [M12] and interoperability [M16] to streamline internal processes. Citizens are treated as passive service users who engage primarily through automated or self-service functions.

Professionalism Ideal: Rooted in legal-rational bureaucracy, this tradition highlights accountability [M6], legality of data protection [M13] and transparency [M10], [M18]. Citizens are viewed as external actors with rights and obligations, requiring secure and consistent administrative procedures.

Service Ideal: Notably, no DGMMs in the sample explicitly connect service provision with a distinct administrative tradition. This suggests a gap between citizen-centric ambitions and their institutional anchoring.

Engagement Ideal: A few models promote engagement by referencing collaboration with civil society in policy development [M6], [M16]. Here, citizens are seen as partners in governance, though this orientation remains limited in practical uptake.

4.2 Representative values

This dimension examines the normative values emphasized within DGMMs, shedding light on how citizen roles are implicitly or explicitly framed across the four value positions.

Efficiency Ideal: DGMMs frequently stress values such as cost reduction [M1], [M11], [M12], [M13], [M14], [M15], [M18], productivity and performance [M1], [M3], [M17] and time efficiency [M15]. Citizens are positioned as efficient users of services, often expected to perform self-service tasks [M4], [M9], aligning with a transactional and performance-driven logic.

Table 2. DGMMs and representation by ideal and dimension

Model	Frequency of Citizens Explicitly Addressed in DGMM (Waara, 2025)	Ideal and dimension in which the citizen is addressed (explicitly or implicitly) Dimensions; 1 = Public administration tradition, 2 = Representative values, 3 = E-government purpose, 4 = Technological frame for IT, 5 = Ideal view on citizens																			
		Efficiency ideal					Professionalism ideal					Service ideal					Engagement ideal				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
M1	0		■			■								■	■	■					
M2	0																				
M3	0		■		■	■															■
M4	1				■																
M5	2												■								■
M6	2							■						■			■	■			
M7	5		■	■	■			■	■				■	■	■			■	■	■	■
M8	5						■	■					■		■						
M9	8				■	■							■			■					
M10	19	■					■						■					■	■		
M11	20		■													■					
M12	29	■	■					■					■								■
M13	34		■		■			■		■	■		■		■	■					■
M14	35		■					■					■								■
M15	40		■		■			■							■					■	
M16	43	■	■					■					■	■	■	■	■	■	■		■
M17	51		■	■	■			■					■		■	■		■		■	■
M18	56		■					■					■			■		■			
The frequent citizen is referred to in each dimension of the ideal.		3	11	2	7	3	2	10	1	1	1	0	11	4	7	7	2	6	3	3	8
The frequent citizen is referred to in each ideal.		26					15					29					22				

Professionalism Ideal: Central values include legality, accountability, trust and data protection [M6], [M13], [M16], [M17], [M18]. Citizens are conceptualized as rights-bearing individuals whose interactions must conform to legal norms. The emphasis on transparency [M18] and trust in e-government services [M12] and [M14] reinforces a compliance-oriented framing.

Service Ideal: Models in this category foreground citizen centricity [M5], [M9], [M10], [M13], [M14], [M16], [M17], [M18], satisfaction [M8] and co-production [M12]. Tailored, accessible and high-quality services are emphasized [M9], [M13], [M17], reflecting a view of citizens as valued customers and active contributors to service delivery.

Engagement Ideal: Engagement-focused models highlight democracy, deliberation and participation [M7], [M16]. Citizen involvement in civic affairs [M6], [M17], public consultation [M7] and broader societal inclusion [M10], [M18] is promoted. However, these values are less frequently operationalized, indicating a gap between normative ambition and model design.

4.3 E-government purpose

This dimension captures the underlying goals attributed to e-government within DGMMs and how these goals shape the role of citizens.

Efficiency Ideal: E-government is framed as a tool to streamline, rationalize and digitize internal administrative processes. This includes optimizing information flows [M7], automating services [M17] and enhancing overall digitalization [M17]. Citizens are treated as beneficiaries of efficiency gains but are not actively involved in shaping services.

Professionalism Ideal: The purpose centers on maintaining legality and administrative consistency. E-government supports secure public records and standardization [M7], reinforcing legal compliance and procedural reliability. Citizens are positioned primarily as data subjects operating within established legal frameworks.

Service Ideal: DGMMs emphasize improving the availability, accessibility and usability of government services [M1], [M6], [M16]. Digital tools are leveraged to enhance service delivery [M7], aligning with citizen needs. However, while the goal is citizen satisfaction, their role remains largely as recipients of pre-defined services.

Engagement Ideal: Here, the purpose of e-government expands to deliberative interaction, co-production of policy and enhancing trust and well-being [M7], [M10], [M16]. Models reflecting this position emphasize bringing government closer to citizens and enabling participatory governance. Still, these purposes are less frequently embedded compared to more transactional objectives.

4.4 Technological frame for IT – how citizens interact with technology

This dimension analyzes how technology is framed in relation to citizen interaction within DGMMs, ranging from passive automation to active network facilitation.

Efficiency Ideal: Technology is primarily viewed as a tool for automation, increasing performance and reducing administrative costs [M3], [M17]. Citizens engage through self-service portals [M4], [M9], [M17] or receive automated information and services [M7], [M13]. Their interaction is limited to transaction execution or service consumption via pre-structured digital channels.

Professionalism Ideal: IT serves an infrastructural role, supporting legal compliance and data integrity. Systems ensure accurate reproduction of bureaucratic records [M13] and enforce rule-based operations, such as data storage and protection [M13, Stage 5]. Citizens are situated within a framework of procedural rigor rather than usability.

Service Ideal: Technology is framed as service-enabling, extending the quality, accessibility and availability of public services [M1], [M13], [M15], [M16]. Emphasis is placed on ease of use [M15], improved citizen contact [M7], [M17] and tailored service delivery environments. While more interactive, this remains within a service consumption paradigm.

Engagement Ideal: IT is positioned as a network facilitator, enabling two-way communication and participatory interaction [M7], [M15], [M17]. This includes support for co-design, civic input and collaborative digital environments. However, only a limited number of models incorporate this vision explicitly, indicating its emerging but underutilized status.

4.5 Ideal view on citizens

This dimension synthesizes how DGMMs implicitly or explicitly conceptualize the citizen, from passive service user to active co-creator, across the four value positions.

Efficiency Ideal: Citizens are framed as self-servers, expected to independently access and use digital services [M1], [M3], [M4], [M9]. Interaction is minimal and transactional, with services designed for automation and scalability. In some models, the public sector is even identified as the primary user, not the citizen [M3].

Professionalism Ideal: The citizen is viewed as a rights-bearing external entity, engaging with services based on legal entitlements and obligations [M13]. Their role includes

providing accurate data to public records, with compliance ensured through legal safeguards and authentication protocols.

Service Ideal: Citizens are understood as service co-producers, contributing to public value by shaping or personalizing services to meet their needs [M9], [M11], [M13], [M16], [M17], [M18]. Models highlight co-creation [M17, Stage 4], tailoring services to vulnerable groups [M17] and incorporating feedback to improve quality.

Engagement Ideal: Citizens are conceptualized as engaged agents, actively involved in public policy, service design and delivery [M5], [M7], [M12], [M13], [M14], [M16], [M17]. This includes initiating service ideas [M13, Stage 4], suggesting innovations [M13, Stage 5] and participating in broader civic networks. Although promising, this framing remains underrepresented across the reviewed models.

5. Discussion

Assessing an organization's digital maturity is a prerequisite for enabling DT (Nerima and Ralyté, 2021), in which citizens play a pivotal role (Waara, 2025). Nevertheless, responsibility for DT does not rest solely with public administration (Mergel *et al.*, 2019). As the primary beneficiaries of public sector digitalization, citizens constitute a central unit of analysis in digital government research (Vintar *et al.*, 2002; Wimmer, 2002; Haraldsen *et al.*, 2004). Accordingly, the integration of the citizen perspective into DGMMs represents a logical progression (Waara, 2025). However, the citizen viewpoint remains underrepresented in existing maturity models, thereby constraining their potential to advance inclusive governance (Meyerhoff Nielsen, 2016). A central finding of this study is the variation in how DGMMs position citizens' role, both explicitly and implicitly. While some models position citizens at the periphery, others take a more comprehensive approach by integrating them across several public administration value ideals and the dimensions of those value ideals.

A key finding from our review is the persistent mismatch between the citizen-centric ambitions articulated in many DGMMs and the actual practices or structures proposed within them. While citizen-centricity is often emphasized rhetorically, in practice, many DGMMs still treat citizens largely as passive recipients rather than active participants. For instance, models aligned with the efficiency and professionalism ideals primarily frame citizens as users of automated services or as data subjects, rather than involving them meaningfully in the design or delivery of services. This confirms earlier criticisms raised by Meyerhoff Nielsen (2020) and Chohan *et al.* (2020), who noted that maturity models often prioritize internal organizational goals over genuine citizen inclusion. Even models that reference citizen engagement, such as those discussed by Dias and Gomes (2014) and Chohan *et al.* (2020), tend to operationalize participation superficially, focusing more on consultation rather than on genuine co-creation activities. Our analysis reveals that while many models mention citizen-centricity as a goal, there is often a lack of concrete mechanisms or structured pathways to involve citizens in meaningful ways, especially beyond early service design stages. This disconnect highlights a crucial gap that limits the practical realization of citizen-driven public value in digital government transformation efforts. Bridging this gap requires not only methodological refinement of maturity models but also a cultural shift within public organizations toward genuinely shared governance with citizens.

Another important observation is the importance of context when considering the role of citizens in DGMMs. The reviewed literature emphasizes that citizen roles are not uniform but vary significantly depending on national governance structures, sectoral domains, or levels of government (Waara, 2025; Hujran *et al.*, 2023a). Our findings support this view, showing that while some models attempt to integrate citizens more actively, they often do so without adapting to specific contextual realities. As Distel and Lindgren (2023) argue, different value positions in

e-government research produce divergent expectations of the citizen's role, suggesting that a universal citizen-centric model is unlikely to succeed across all settings. For instance, while engagement ideals promote participatory practices, their adoption remains uneven, particularly in contexts with strong legal-bureaucratic traditions aligned with professionalism ideals. Similarly, Abu Bakar *et al.* (2020) highlight that digital government initiatives must consider the local socio-political environment to meaningfully engage citizens. Our results demonstrate that without tailoring maturity models to contextual factors, attempts at citizen-centricity risk becoming symbolic rather than substantive, reinforcing the need for more flexible and adaptable frameworks that reflect the diversity of public sector environments.

A recurring pattern in our analysis is the dominance of internal efficiency over real citizen engagement within most DGMMs. Although many models highlight the need for DT to better serve citizens, their focus largely remains on optimizing internal processes and reducing administrative costs (Meyerhoff Nielsen, 2020; Lindgren *et al.*, 2019). This is particularly evident in models aligned with the efficiency ideal, where citizens are primarily viewed as users of self-service portals or recipients of automated outputs rather than active contributors. As Abu Bakar *et al.* (2020) and Mergel *et al.* (2019) have suggested, while digitalization holds enormous potential for improving public service delivery, it must be accompanied by genuine efforts to engage citizens in meaningful participation. Our findings show that although service ideals begin to acknowledge the value of citizen co-production, the engagement ideal, which truly positions citizens as partners in service and policy design, remains underrepresented across the reviewed models. This persistent internal focus underscores a fundamental tension between improving operational performance and fostering inclusive governance, suggesting that advancing citizen engagement still requires a significant cultural and structural shift within public sector digital initiatives. As Sundberg and Gidlund (2022) note, in digital settings, citizen participation is often shallow and symbolic, treating people as customers rather than partners. Genuine involvement is rare and varies in influence. While participation can build trust and improve outcomes, it is also costly, time-consuming and often unequal – so efficiency-focused projects remain more common.

Our analysis contributes to previous research in several ways. First, it aligns with the theoretical work of Distel and Lindgren (2023), demonstrating how their framework can be applied to evaluate policy-level documents and strategies such as DGMMs regarding their conceptualization of citizens. In doing so, it clearly highlights differences in how citizens are addressed across models.

Second, when viewed through this theoretical lens, the analysis reveals that ideas of how citizens relate to the concept of "digital maturity" remain scattered and, at best, emergent in current government contexts. Rather than offering a coherent perspective, most models display partial or inconsistent attention to citizens' roles.

Third, the analysis underscores the value of sensitizing both researchers and practitioners who use specific DGMMs to the assumptions embedded in these frameworks regarding citizens. Such awareness can help avoid overlooking important dimensions of citizen involvement in DT.

5.1 Theoretical contributions

This study responds to a collective call from digital government scholars (e.g. Janowski, 2015; Lindgren *et al.*, 2019; Mergel *et al.*, 2019; Sundberg and Holmström, 2024) who have emphasized the need to place citizens at the center of DT research. Most maturity and transformation frameworks remain institution- and technology-oriented, thereby overlooking the theoretical understanding of how citizens contribute to public value in digital government. By addressing this gap, our study contributes to ongoing theoretical

debates on how the citizen perspective can be systematically integrated into the conceptual understanding of digital government maturity.

This research also bridges the gap between descriptive and conceptual approaches to digital government maturity. While other studies such as Waara (2025) mapped how citizens are mentioned in DGMMs and Distel and Lindgren (2023) conceptualized citizens' roles through public value ideals, this study unites these perspectives. By applying the extended public value framework to the analysis of 18 DGMMs, it demonstrates how citizen roles can be interpreted as normative and structural dimensions of digital maturity rather than as peripheral contextual elements.

More broadly, the study advances the theoretical underpinnings of DGMM by proposing the idea of a citizen-related maturity dimension. It shows that the four public value ideals; efficiency, professionalism, service and engagement; represent distinct orientations toward citizens that can coexist or compete within DT processes. Recognizing these value positions makes the normative foundations of DGMMs explicit and provides researchers with a refined analytical tool to assess the democratic and participatory qualities of DT initiatives. In this way, the paper contributes to the theoretical maturation of digital government studies by linking technical assessments of maturity with broader questions of legitimacy, participation and public value creation.

5.2 Practical implications

This study also provides practical and societal implications for policymakers and public managers. The findings show that integrating a clear citizen dimension into DGMM can strengthen both the effectiveness and legitimacy of DT.

For the efficiency ideal, governments should combine automation with accessibility and feedback opportunities. Citizens should be able to share experiences and suggest improvements so that efficiency becomes a shared rather than purely administrative goal. For the professionalism ideal, the results underline the importance of legality, accountability and data protection. Ensuring transparency and secure handling of personal information helps maintain citizens' trust and confidence in digital services. Within the service ideal, authorities can promote co-creation by involving citizens in designing and improving digital services. When people see that their views influence service quality, their acceptance and willingness to use e-government platforms increase. The engagement ideal highlights the societal value of participation. Opportunities for citizens to contribute ideas, take part in consultations and engage in online forums support trust and greater sense of inclusion.

Together, these implications show that digital government maturity depends not only on technology and management but also on the quality of interaction between citizens and public institutions. Strengthening this relationship can build trust, increase participation and support democratic DT.

6. Conclusions

This study set out to explore how citizens' roles are conceptualized and integrated within DGMMs by using Distel and Lindgren's extended framework for e-government value positions. Through a systematic analysis of 18 DGMMs, the research addressed the core research question of how citizens are represented across different value ideals: efficiency, professionalism, service and engagement. The findings demonstrate that while the role of citizens is acknowledged across all four ideals to varying extents, significant differences exist regarding the depth and nature of their inclusion. In particular, the study shows that models aligned with efficiency and professionalism ideals tend to position citizens as passive actors, whereas service and engagement ideals allow for more active and participatory roles.

By examining both explicit and implicit references to citizens within the models, the research provides a nuanced understanding of the current landscape and identifies key gaps in achieving truly citizen-centered digital government transformation.

While some DGMMs offer a holistic approach, still several privilege internal efficiency and organisational goals over citizen inclusion. This reinforces earlier critiques and highlights a persistent gap between rhetorical citizen-centricity and practical implementation. Addressing this gap requires models that explicitly embed citizens in processes of co-creation, decision-making and service design. Incorporating a citizen-focused dimension would not only strengthen the analytical capacity of DGMMs but also support democratic DT, ensuring that civic voices remain central in the design and evaluation of digital government initiatives.

This study contributes to the growing body of research on digital government by clarifying how citizens are positioned within DGMMs. Addressing the research aim and questions, it offers a structured analysis based on public value ideals, revealing the inconsistencies between rhetorical citizen-centricity and actual model designs. By applying Distel and Lindgren's extended framework, the study advances theoretical understanding of the citizen's role in digital maturity assessments and highlights where further development is needed to move from passive service delivery toward active citizen participation.

While this study provides important insights, it is not without limitations. The analysis focused on a selected sample of eighteen DGMMs, and although diverse, it may not capture all emerging models or regional variations. Interpretation of citizen roles was also inherently subjective, despite efforts to ensure consistency through collaborative analysis. Future research could extend this work by examining additional models, including non-English and newly developed frameworks, and by exploring how citizen engagement evolves over time as DT efforts mature. Comparative studies across different governance contexts could also deepen the understanding of how local conditions shape citizen-centric approaches in practice. Given that the service ideal was the most frequently referenced, it is pertinent to explore how this ideal is operationalized in practice – how the public sector engages with it, which dimensions of the value ideal are applied, and how these practices can be systematically studied.

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Appendix 1. Digital government maturity models

Table A1 organizes the Digital Government Maturity Models by how often they explicitly mention citizens. Models with no references appear at the top, while Model 18 includes the highest number of references (56), following Waara's (2025) data set

Table A1.

No.	Authors, year	Model	Type of model
M1	Kafel *et al*. (2021)	Multi-dimensional PS organizations' DMM	Dimension
M2	Nerima and Ralyté (2021)	Digital maturity balance model	Dimension
M3	Magnusson and Nilsson (2019)	DiMiOS: a model for Government Digital Maturity. Digital administration.	Dimension
M4	Fath-Allah *et al.* (2014)	Measurement-Based eGov. Portals maturity model	Stage
M5	Heeks (2015)	The Manchester e-gov. Maturity model	Stage + dimension
M6	Lee and Kwak (2012)	Open government maturity model (OGMM)	Stage
M7	Dias and Gomes (2014)	A Three-dimension maturity model	Dimension+stage
M8	Renteria *et al.* (2019)	Digital government maturity framework	Dimension
M9	Alhomod *et al.* (2012)	A Four-stage maturity model of e-government	Stage
M10	OECD (2014)	Recommendation of the council on digital gov. Strategies	Dimension
M11	UN (2012)	E-Government Survey 2012E-Gov. for the People	Stage
M12	EU (2023)	eGovernment benchmark	Dimension
M13	Hujran *et al.* (2023b)	SMARTGOV, an extended maturity model	Stage
M14	McKinsey (2016)	Digital by default	Dimension
M15	(Joshi and Islam (2018)	e-gov. Maturity model for sustainable E-Gov. Services	Dimension+stage
M16	Chohan, *et al.* (2020)	E-government maturity model	Stage
M17	Janowski (2015)	Digital government evolution model	Stage
M18	Eggers and Bellman (2015)	Digital government model. Deloitte.	Dimension

Appendix 2. Summary of the analysis

Table A2. Summary of the results: public administration tradition

Dimension	Efficiency ideal	Professionalism ideal	Service ideal	Engagement ideal
Public administration tradition	Modernization [M10] Reduce administrative burden [M12] Interoperability [M16]	Providing an independent, robust and consistent administration [8] Transparent gov [M10]		Engaging with civil society to facilitate policy development in accordance with liberal democratic principles [M6] [M16]

Table A3. Summary of the results: representative values

Dimension	Efficiency ideal	Professionalism ideal	Service ideal	Engagement ideal
Representative values	Productivity and performance of service provider [M1] [M3] [M17; Stages 1&2] Performance of citizen, ability for self-service [M4] [M9] Public value creation [M13; Stage 2] Cost Reduction [M1] [M11] [M12] [M13; Stage 3] [M14] [M15] [M18] Access and availability [M7] [M11] Value for money [M11] Time efficiency [M15]	Accountability [M6] [M17; Stage 3] Legality – of data protection [M13; Stage 5] Authentification [M7] Trust [M8] [M16] [M17; Stages 3&4] Trust on e-gov services [M15] Acceptability [M17; Stages 3&4] Durability, equity, legality and accountability [M6] [M16] [M18] Transparency [M18] Privacy [M12] Privacy concerns [M14]	Citizen centricity – tailored service to the citizen [M9]/region/location [M17; Stage 3]/vulnerable groups [M17; Stage 4] – around the clock accessibility [M13; Stage 3] – fast transactions [M13; Stage 3]/responses [M17; Stage 4] – convenient transactions [M13; Stage 3] [M17; Stage 3] Citizen centricity [M5] [M9] [M10] [M13] [M14] [M16] [M17] [M18] Citizen's satisfaction [M8] Interaction with citizens [M7] Citizen day-to-day performance [M17; Stage 4] Sustained collaboration with citizens [M17; Stage 4] Co-producers [M12]	Democracy, deliberation and participation Democracy, deliberation and participation [M16] Participatory democracy [M7] Public consultation [M7] Citizen engagement in political and civic affairs [M6] [M17; Stage 3] Motivational rewards [M16] Public engagement [M6] [M10] [M18] Societal equality [M10]

Table A4. Summary of the results: e-government purpose

Dimension	Efficiency Ideal	Professionalism Ideal	Service ideal	Engagement ideal
E-government purpose	Internal flow of information [M7] Digitalization (in itself) [M17; Stages 1&2]	Government procurement [M7]	Improve the availability, accessibility and usability of gov services by providing them online [M1] [M6] [M16] Delivery of services [M7]	Citizen participation (in public decision-making processes) [M7] Support deliberative interactions with the public and the co-production of policy [M16] Bring gov's closer to citizens [M10] Increase trust and well-being [M10]

Table A5. Summary of the results: technological frame for IT

Dimension	Efficiency Ideal	Professionalism Ideal	Service ideal	Engagement ideal
(Technological frame for IT) – How citizens interact with technology?	IT for automating admin tasks [M3] [M17; Stages 1&2] Citizen as receiver of information from government [M7] [M13; Stage 1] Citizen with access to (self-) services/portal [M4] [M9] [M17; Stages 1&2] Citizens can contact (interact) the government [M4] [M7] [M9] [M13; Stage 2] …citizens can complete transactions with the government (through portal) [M4] [M9] [M13; Stage 3] Technology (innovation) Adoption [M15]	Bureaucratic record [M13] Compliance with the rules (of data storage and protection) [M13; Stage 5]	Extended range of services [M13; Stage 3] Availability and quality of services for citizens [M1] [M13; Stage 3] [M15] Enabling/facilitating citizen contact [M7] [M17; Stage 3] Quality of services [M8] Service enabling: IT extends the range, availability and quality of service for citizens [M16] Infrastructure – Need of proper ICT enabled environment for its citizens to adopt services. [M16] Ease of use [M15]	Enabling/facilitating citizen contact [M7] [M15] [M17]

Table A6. Summary of the results: ideal view on citizens

Dimension	Efficiency Ideal	Professionalism Ideal	Service ideal	Engagement ideal
Ideal view on citizens	Citizen as external entity [M3]; even "key user" is the public sector employer, not citizen [M3] Citizen ability for self-service [M1] [M9]	Citizen with rights (for protected data) [M13; Stage 5]	External entity/Co-producer [M17; Stages 3&4] – Meeting citizens' needs – Individual service [M9] – convenience [M13; Stage 3] [M17; Stage 3] – citizen "sourcing" [M17; Stage 3] Co-creator of values [M1] [M17; Stage 4] [M18] Service co-producer [M11] [M16] [M18] Meet citizens' needs [M16]	Participating entity [M7] [M12] [M14] [M16] Participation in service initiation and design, ideas, topics [M13; Stage 4] Suggesting new services [M13; Stage 5] Implicit: Citizens mentioned to be potentially taking part in service innovations [M3] Participating entity, integral part of network, involved in all phases of public policy, service design and delivery. [M5; highest stage] [M17; Stage 3] Engagement by default [M12] Empowerment [M14] Broader engagement [M14]