Meaningful E-Participation Outcomes Through the Interplay of Supply and Demand-Side Drivers



DOBRINA STOYANOVA POIRIER

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Dissertation

By

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DISSERTATION

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Summary

This dissertation addresses a key gap in the e-participation literature, which has often examined adoption through fragmented supply-side (government and institutions) or demand-side (citizens and users) perspectives. This fragmentation is counter to the very essence of participation which is intended as a deliberative process that brings citizens and government together to co-create policy and improve service delivery efficiency. The study addresses two important gaps in the e-participation literature. First, limited attention has been paid to how supply and demand-side drivers interact in practice to influence adoption and meaningful outcomes of e-participation initiatives. Second, much of the literature implicitly assumes that adoption naturally produces meaningful outcomes, despite limited empirical evidence to that effect (Fung, 2015).

These gaps shaped the analytical direction of the dissertation and motivated the development of a consolidated theoretical framework focused on the interplay between drivers and the conditions under which participation becomes meaningful.

The dissertation employs a mixed-methods research design. The quantitative phase, using longitudinal panel data from European regions (2010–2022), explores the influence of supply and demand-side drivers on e-participation adoption. The qualitative phase draws on case studies of the Citizens' Guide to the Budget and Irembo.Gov in Rwanda to examine how the interaction between supply and demand-side drivers shapes e-participation outcomes. Rwanda was purposefully selected as an extreme case (Patton, 2015), as it exhibits contradictory conditions: strong supply-side e-government readiness, contrasted with weak demand conditions, within hierarchical governance traditions.

The study makes four key contributions. First, it establishes the centrality of demand-side drivers, by showing that they are at least as important as supply-side drivers in shaping e-participation adoption and outcomes. Second, it conceptualizes e-participation as the mediated interplay of supply and demand-side drivers, where outcomes are not determined by the drivers themselves, but by how their interaction is mediated, governed, and institutionalized. Third, it demonstrates that adoption does not necessarily translate into meaningful outcomes and introduces a distinction between instrumental and transformative outcomes. Finally, the insights culminate in the presentation of a Revised E-participation Framework for Meaningful Outcomes, that views participation as a relational governance process shaped by a number of pre-conditions (institutional willingness and power dynamics) and the mediation quality of the supply-demand side interface.

The dissertation is organized into seven chapters. Chapter 1 introduces the research problem, objectives and questions. Chapter 2 reviews the e-participation literature, examines relevant theoretical perspectives and develops the study's initial conceptual framework. Chapter 3 presents the quantitative analysis which explores the variations in e-participation adoption and its drivers across European countries and regions. Chapter 4 outlines the study's qualitative research design, drawing on an exploratory multiple-case study methodology in an extreme setting. Chapter 5 examines the two Rwandan cases in detail: the Citizens' Guide to the Budget and Irembo.Gov. Chapter 6 brings together the quantitative and qualitative findings, discussing how supply and demand-side drivers interact within different institutional and contextual settings; and introduces the Revised E-Participation Framework for Meaningful Outcomes. Finally, Chapter 7 synthesizes the findings, discusses their implications for theory and practice, and offers conclusions and recommendations for policymakers and future research.

Samenvatting

Dit proefschrift behandelt een belangrijke leemte in de literatuur over e-participatie, waarin adoptie vaak is onderzocht vanuit gefragmenteerde aanbodzijde- (overheid en instituties) of vraagzijdeperspectieven (burgers en gebruikers). Deze fragmentatie staat haaks op de essentie van participatie, die is bedoeld als een deliberatief proces dat burgers en overheid samenbrengt om gezamenlijk beleid te ontwikkelen en de efficiëntie van de dienstverlening te verbeteren. Het onderzoek behandelt twee belangrijke leemten in de literatuur over e-participatie. Ten eerste is er weinig aandacht besteed aan de manier waarop factoren aan de aanbod- en vraagzijde in de praktijk op elkaar inwerken en de adoptie en betekenisvolle uitkomsten van e-participatie-initiatieven beïnvloeden. Ten tweede wordt in een groot deel van de literatuur impliciet aangenomen dat adoptie vanzelf tot betekenisvolle uitkomsten leidt, ondanks het beperkte empirische bewijs hiervoor (Fung, 2015).

Deze leemten bepaalden de analytische richting van het proefschrift en vormden de aanleiding voor de ontwikkeling van een geconsolideerd theoretisch raamwerk dat gericht is op de wisselwerking tussen de factoren en de voorwaarden waaronder participatie betekenisvol wordt.

Het proefschrift maakt gebruik van een mixed-methods onderzoeksopzet. In de kwantitatieve fase wordt aan de hand van longitudinale paneldata uit Europese regio's (2010–2022) de invloed van factoren aan de aanbod- en vraagzijde op de adoptie van e-participatie onderzocht. De kwalitatieve fase is gebaseerd op casestudy's van de Citizens' Guide to the Budget en Irembo.Gov in Rwanda en onderzoekt hoe de wisselwerking tussen factoren aan de aanbod- en vraagzijde de uitkomsten van e-participatie vormgeeft. Rwanda werd doelgericht geselecteerd als extreme casus (Patton, 2015), aangezien het tegenstrijdige omstandigheden vertoont: een sterke gereedheid voor e-overheid aan de aanbodzijde tegenover zwakke omstandigheden aan de vraagzijde, binnen hiërarchische bestuurstradities.

Het onderzoek levert vier belangrijke bijdragen. Ten eerste stelt het de centrale rol van factoren aan de vraagzijde vast door aan te tonen dat deze minstens even belangrijk zijn als factoren aan de aanbodzijde bij het vormgeven van de adoptie en uitkomsten van e-participatie. Ten tweede conceptualiseert het e-participatie als de gemedieerde wisselwerking tussen factoren aan de aanbod- en vraagzijde, waarbij de uitkomsten niet door de factoren zelf worden bepaald, maar door de wijze waarop hun wisselwerking wordt gemedieerd, bestuurd en geïnstitutionaliseerd. Ten derde toont het aan dat adoptie niet noodzakelijkerwijs tot betekenisvolle uitkomsten leidt en introduceert het een onderscheid tussen instrumentele en transformatieve uitkomsten. Ten slotte komen de inzichten samen in de presentatie van een Herzien E-participatieraamwerk voor Betekenisvolle Uitkomsten, dat participatie beschouwt als een relationeel bestuursproces dat wordt gevormd door een aantal randvoorwaarden (institutionele bereidheid en machtsverhoudingen) en de kwaliteit van de mediatie op het raakvlak tussen de aanbod- en vraagzijde.

Het proefschrift is opgebouwd uit zeven hoofdstukken. Hoofdstuk 1 introduceert het onderzoeksprobleem, de doelstellingen en de vragen. Hoofdstuk 2 bespreekt de literatuur over e-participatie, onderzoekt relevante theoretische perspectieven en ontwikkelt het oorspronkelijke conceptuele raamwerk van het onderzoek. Hoofdstuk 3 presenteert de kwantitatieve analyse,

waarin de verschillen in de adoptie van e-participatie en de onderliggende factoren in Europese landen en regio's worden onderzocht. Hoofdstuk 4 beschrijft de kwalitatieve onderzoeksopzet van de studie, die is gebaseerd op een verkennende meervoudige-casestudymethodologie binnen een extreme context. Hoofdstuk 5 onderzoekt de twee Rwandese casussen in detail: de Citizens' Guide to the Budget en Irembo.Gov. Hoofdstuk 6 brengt de kwantitatieve en kwalitatieve bevindingen samen, bespreekt hoe factoren aan de aanbod- en vraagzijde binnen verschillende institutionele en contextuele omstandigheden op elkaar inwerken, en introduceert het Herzien E-participatieraamwerk voor Betekenisvolle Uitkomsten. Ten slotte synthetiseert hoofdstuk 7 de bevindingen, bespreekt het de implicaties ervan voor theorie en praktijk en biedt het conclusies en aanbevelingen voor beleidsmakers en toekomstig onderzoek.

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Chapter 1: Introduction

The chapter introduces the motivation, research problem, questions and methodology addressed by this dissertation, highlighting the gap between the potential of e-participation and its limited adoption in practice. It further highlights the fragmented focus on e-participation in the literature, which often separates the supply and demand-sides and argues for an integrated framework that considers their interplay. Furthermore, the chapter discusses the research contribution and research methodology of the study. Lastly, it outlines the structure of the dissertation and provides a summary for each chapter.

1.1 Motivation

Since the early 2000s, the rise of e-participation has led to a marked proliferation of e-participation initiatives. This trend has been driven by the spread of digital technologies, e-government, and a growing recognition that, in the digital age, governments can do more than simply deliver services online. Policy makers can also leverage digital tools to engage citizens directly in shaping public policy and improving service delivery to create public value. These trends have seen the emergence of a wide range of e-participation initiatives, spanning online consultations, participatory budgeting portals, crowdsourcing platforms, and open data tools, among others, adopted at the national or municipal level (Le Blanc, 2022).

Policymakers recognize e-participation as a vital tool for strengthening democratic governance (Macintosh, 2004). The literature identifies several potential benefits of e-participation, including improved government understanding of citizens' needs and preferences, more responsive and effective policy formulation, enhanced legitimacy of decision-making processes, and greater public trust in government (e.g., Åström et al., 2012; Macintosh, 2004; Medaglia, 2012). Furthermore, citizen engagement is seen as a key to e-government development, which is exercised through e-participation (Osborne & Strokosch, 2013; Rowe & Watermeyer, 2018). Moreover, e-participation is said to promote inclusive governance by enabling the full participation of all citizens (Wampler, 2007; Rowe & Frewer, 2000).

However, despite these well-theorized benefits, the actual use of e-participation initiatives and the realization of their intended benefits remain largely limited, uneven, and highly context-specific. Many initiatives struggle not only to attract and sustain citizen engagement, but also to translate participation into tangible influence over policy decisions or service delivery improvements. Case studies of specific initiatives reveal that many e-participation platforms attract minimal engagement or struggle to maintain citizen interest over time (Saebø et al., 2011). Eurostat data from 2023 reveal that although nearly 70% of EU citizens interact with public authorities online,[1]

[1] *[isoc_ciegi_ac] E-government activities of individuals via websites*

a much smaller proportion, 8.5% of EU individuals use the internet to take part in online consultations or voting, such as urban planning or signing a petition.[2] This challenge is evident even in leading e-government countries such as Estonia, which actively promotes its digital governance achievements internationally. For example, Toots (2019) evaluated the Estonian national e-participation platform Osale.ee and, echoing government assessments, concluded that it had not met its objectives.

In developing countries, this knowledge gap between e-participation availability and usage is even wider. In such contexts much less is known about how e-participation initiatives are designed, adopted, implemented, and sustained in practice. While the majority of empirical and comparative studies have focused on advanced democracies, evidence from developing countries offers opportunities to examine supply and demand-side drivers, and their interplay under conditions of governance challenges, rapid technological adoption, and uneven access. (Medaglia, 2012; Ohemeng & Ofosu-Adarkwa, 2015). These conditions can reveal dynamics that are less visible in the more stable settings of advanced economies.

1.2 The e-participation problem reviewed in the literature

The gap between e-participation potential and its actual use has prompted extensive academic inquiry. The e-participation literature has been sliced and diced in a variety of ways, reflecting its multidimensional character. Scholars have viewed e-participation as a subset of the literature studying e-government or civic and political participation (Pirannejad, Janssen & Rezaei, 2019). Studies have also classified research by stages and depth of engagement, ranging from e-information, e-consultation, and e-decision-making (Macintosh, 2004). Similarly, frameworks have mapped the technological tools employed, the context and purpose of e-participation initiatives (Sæbø, Rose, & Flak, 2008). Systematic literature reviews further categorize the field along major analytical strands: adoption, implementation, diffusion (Steinbach, Sieweke, & Süß, 2019).

One of the most prominent strands of the literature has generally discussed e-participation from either supply (government) or demand-side (citizens) perspective. Studies often privilege technological availability on the supply-side and individual perceptions and socio-economic factors on the demand-side. These perspectives are highly relevant for both research and practice because they study the very actors whose interaction determines whether e-participation initiatives succeed or fail. However, by focusing separately on the capacities of governments and technology on the one hand, and the motivations and socio-economic characteristics of citizens on the other, rather than on their interaction, research risks further fragmenting the field. Such one-sided views

[2] *The Eurostat indicator "Internet use: taking part in online consultations or voting to define civic or political issues (e.g. urban planning, signing a petition)" captures the share of individuals who have engaged in any form of online civic or political participation, regardless of who organized it, and thus, it is not limited to government-led e-participation initiatives. (link to page)*

limit a holistic understanding of what drives the adoption and outcomes of e-participation initiatives.

Susha and Grönlund (2012) reinforce this point, noting that "user studies and system studies have grown in parallel," thereby underscoring the need for greater convergence. Pirannejad et al. (2019) argue that the field remains divided, as studies are "often either supply or demand-driven and rarely attempt to reconcile the two conceptually or empirically." Le Blanc (2020) echoes this concern, observing that the literature frequently analyzes participation from either a citizen or a government perspective, but seldom both, making it difficult to draw clear policy conclusions.

Research that focuses on e-participation from a supply-side perspective centers on the technological, institutional, and organizational configurations that enable e-participation through websites, platforms, and frameworks (Al-Dalou & Abu-Shanab, 2013; Avdic et al., 2007). Examining supply-side factors is essential, as they highlight the institutional and technical readiness, governance arrangements, and administrative capacities that determine whether digital participation channels can meaningfully engage citizens. Furthermore, the supply-side also studies governments' political commitment and the integration of participation mechanisms into policy processes. Without such institutional anchoring, even high levels of citizen willingness or engagement may fail to translate into tangible outcomes (Macintosh & Whyte, 2006; Sæbø, Rose & Flak, 2008, Toots, 2019; Medaglia, 2012).

This body of e-participation supply-side research often evaluates platform availability and technical functionality, relying on macro-level indicators that obscure actual uptake of e-participation initiatives or their societal value (Boudjelida et al., 2016; Pirannejad et al., 2019). One prominent example is the United Nations E-Government Survey which ranks countries using the E-Participation Index (a sub-component of the E-government Index), reflecting the availability of e-participation platforms and portals. Despite its prominence, the index has been criticized for providing a one-sided perspective that falls short in unveiling whether and how e-participation rankings correspond to citizens' uptake or how they translate into outcomes (Le Blanc, 2022; Pirannejad, Janssen & Rezaei, 2019). Moreover, e-participation may appear to be enabled or informed by citizens, when in reality that is not always the case. The process of mobilizing and transforming citizen input into public value creation is often suboptimal, fragmented, or weakly embedded in institutional routines (Zheng, 2015; Osborne & Strokosch, 2013).

Demand-side studies emphasize citizens' willingness to engage online and investigate individual drivers such as perceived usefulness, ease of use of technology, subjective norms, trust, digital skills and socio-economic factors (Venkatesh et al., 2003; Carter & Bélanger, 2005). This perspective is crucial because even the best-designed platforms cannot generate participation without citizens who are motivated, aware, capable, and confident in the value of engaging. However, recent scholarship argues that demand-side drivers of e-participation are deeply embedded in broader social and cultural contexts and should not be reduced to individual attitudes

or technological perceptions, as is the case in much of the literature (Medaglia, 2012). Understanding what drives engagement therefore requires attention to who participates, why, and under what social and cultural conditions. Such factors help explain whether participation is seen as meaningful, legitimate, or worthwhile. At the same time, demand-side studies often lack nuance regarding the depth, authenticity, and outcomes of citizen participation, despite the widespread framing of citizens as stakeholders and co-creators of e-participation (Gil-García & Pardo, 2005; Randma-Liiv & Vooglaid, 2019).

Few studies focus on e-participation from both the supply and demand-side perspectives, highlighting the synergy between government and citizen engagement (Macintosh and Whyte, 2006; Marzouki et al. 2022). Such studies argue that e-participation effectiveness is contingent on addressing multi-dimensional issues, spanning technological, political, organizational, and social drivers that interact in complex ways across contexts, underscoring the need for a holistic approach.

In terms of the definition of e-participation used in the literature, studies have broadly defined it as the use of digital tools to engage citizens in public policy decision-making and service design and delivery. This is especially the case for supply-side studies. The understanding of what participation entails and how citizens are positioned within it has evolved over time. Early supply-side and technology-driven approaches tended to conceptualize e-participation primarily as a process enabled through digital platforms, where citizens were often treated as passive recipients of information or occasional respondents in consultation procedures (Löfstedt, 2005; Macintosh & Whyte, 2006; United Nations, 2022). In this view, success is measured by the existence of platforms or the volume of online interactions.

More recent scholarship, influenced by participatory governance and co-creation perspectives, reframes e-participation not merely as a process of engagement, but as one that seeks to generate meaningful outcomes through substantive influence, shared decision-making, and the creation of public value. In this view, citizens are understood as active contributors whose knowledge, experiences, and preferences are integral to shaping policy and service outcomes (Osborne & Strokosch, 2013; Marzouki et al., 2022). This shift highlights that meaningful e-participation depends not only on facilitating interaction through digital technologies or other government mechanisms, but also on the extent to which citizen input is incorporated into decision-making processes and translated into tangible policy and service outcomes.

Studies on citizen engagement, drawing on collaborative governance and co-production literature, stress the need to bridge government provision of e-participation tools with citizen adoption through iterative engagement, inclusiveness, deliberation quality, and institutionalization of input (Osborne & Strokosch, 2013; Rowe & Watermeyer, 2018). When supply and demand-side interaction is effectively governed, it can empower citizens, reinforce trust and legitimacy, and

create a virtuous circle that promotes citizen participation and meaningful outcomes (Royo et al., 2024).

Within the collaborative governance literature, the interplay between supply and demand-side factors is brought into sharper focus through an emphasis on the quality of interaction between citizens and institutions and how that interaction leads to meaningful outcomes. Particularly via deliberation, feedback loops and the institutionalization of citizen input. Rather than treating supply (institutional design, platforms, responsiveness) and demand (citizen engagement, trust, participation) as separate domains, this body of work shows how their interaction is mediated and governed in practice. Studies highlight that sustained engagement depends on institutionalized feedback mechanisms and visible responsiveness: where governments fail to close the feedback loop, trust erodes and participation can generate frustration rather than empowerment (Medaglia, 2012; Peixoto & Fox, 2016; Peixoto & Sifry, 2017).

At the same time, the interaction between supply and demand is shaped by contextual and socio-political factors, with evidence showing that deliberation quality is influenced more by the issues at stake and broader political context than by platform design alone (Mitozo &Marques, 2019). Cultural norms, authority structures, and institutional settings further mediate this interplay, affecting how participation is enacted and whether citizens act as co-creators or remain passive recipients (Hofstede, 2001; Åström et al., 2012; Chadwick, 2006; Smith, 2009).

Together, collaborative governance research, while often favoring a supply-side lens that brings citizens into what public service providers are already doing, presents a more balanced view of citizen-government dynamics (Loeffler & Bovaird, 2021). Yet, this literature is criticised for presenting an idealized view of collaboration, assuming citizens and government actors participate on equal terms. Such approaches may downplay cultural factors, power imbalances, bureaucratic resistance, and institutional constraints (Clarke & Craft, 2019).

Positioning e-participation within a developing country context, provides a particularly rich terrain for research. This is due to the diversity of political systems, varying levels of institutional capacity, digital divides, and different socio-cultural norms, which all shape how governments and citizens engagement takes place and shape outcomes (Gigler & Bailur, 2014; Heeks, 2008). In developing countries, empirical studies often favor supply-side drivers such as infrastructure readiness and technological aspects of government platforms, neglecting citizen perspectives and contextual factors (Medaglia, 2012; Peixoto & Fox, 2016). The citizen perspective, already marginal in much of the literature, is even less pronounced in studies of developing countries. The existing empirical evidence remains skewed toward measuring availability rather than outcomes, leaving a gap in understanding both the interplay between supply and demand, and how citizens themselves engage, adopt, and derive value from e-participation initiatives (Parra Beltrán, 2015).

While these contextual dimensions have been acknowledged in the e-participation literature, particularly in more recent work, they have largely remained at the margins. It is the ICT4D

literature that has more systematically focused on developing contexts and how adoption of technology is shaped not only by access to digital tools, but also by political institutions, administrative capacity, trust in government, and socio-cultural norms surrounding authority and collective action (Heeks, 2008; Gigler & Bailur, 2014; Peixoto & Fox, 2016).

Studying the developing countries thus offers opportunities to examine supply and demand-side drivers and their interplay under conditions of governance challenges, rapid technological adoption, and uneven access. Those conditions can reveal dynamics that are less visible in the more stable settings of advanced economies (Peixoto & Sifry, 2017; Heeks & Shekhar, 2019).

Finally, a key limitation in the e-participation literature that explains the differences between supply and demand-side studies is that theoretical models for supply and demand-side perspectives are often grounded in different epistemological and methodological traditions. This divergence presents a significant challenge to integrating these perspectives into a single, coherent analytical framework (Macintosh & Whyte, 2006; Medaglia, 2012; Steinbach, Sieweke, and Süß, 2019). On the demand-side, adoption has traditionally been analyzed using frameworks such as the Technology Acceptance Model (TAM) (Davis, 1989), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), and their numerous extensions. These frameworks emphasize micro-level determinants including perceived usefulness, perceived ease of use, trust, digital skills, facilitating conditions, social influence, political efficacy, and broader socio-cultural or economic factors. By contrast, supply-side studies have been most commonly analyzed through the Technology Organization Environment (TOE) framework (Tornatzky & Fleischer, 1990). Such studies focus on macro-level factors such as institutional design, administrative capacity, and the availability of digital platforms (Gil-García & Pardo, 2005; Luna-Reyes & Gil-García, 2014; Cordella & Tempini, 2015; Randma-Liiv & Vooglaid, 2019).

This difference has reinforced both a disconnect in levels of analysis, micro (citizens) versus macro (government) and disciplinary boundaries. Demand-side research is largely grounded in sociology, and communication studies, while supply-side studies frequently emerges from political science and public administration. Consequently, relatively few contributions adopt integrative, comparative, or mixed-methods approaches capable of systematically examining the interaction between supply and demand in shaping e-participation outcomes.

1.3 Research Contribution

This dissertation contributes to the academic literature by shifting the focus beyond treating supply and demand-side drivers as separate factors by examining how their interplay shapes the adoption and outcomes of government-led e-participation initiatives. The dissertation proposes an outcomes oriented consolidated theoretical framework informed by both perspectives, and specific foundational pre-conditions. Furthermore, the dissertation employs a mixed-methods design that integrates cross-national quantitative analysis of EU countries with in-depth qualitative case studies in Rwanda.

The quantitative component leverages longitudinal databases from Eurostat, the European Social Survey (ESS), the Quality of Government Institute (QoG), and the United Nations E-Government Development Index (UN EGDI). These data sources combine both user-driven measures, primarily survey-based indicators capturing individual behaviours and perceptions, with contextual factors and supply-side determinants. Together, they offer a deeper understanding of how both supply and demand-side drivers shape citizens' adoption of government-provided e-participation. The findings highlight that demand-side drivers, particularly digital skills, trust, cultural factors and civic engagement behaviours, play a central role in explaining variation in adoption over time. The availability of robust longitudinal datasets makes the European context especially well-suited for conducting quantitative analysis of e-participation adoption that allows us to understand how key drivers identified in the literature contribute to adoption and evolve over time. Europe also comprises a diverse set of countries with varying institutional arrangements, levels of digitalisation, and socio-economic conditions, which offer a rich empirical basis for identifying patterns and differences across contexts.

The qualitative component, embedded in two case studies of e-participation in Rwanda, studies the supply and demand-side interplay within an extreme case context. A particular attention is paid on how these interactions are mediated and governed through institutional practices to generate meaningful outcomes. Extreme cases amplify underlying dynamics making the interaction between supply and demand-side drivers more observable (Patton, 2015; Seawright & Gerring, 2008). Rwanda was purposefully selected as an extreme case, as it exhibits particularly pronounced characteristics of the phenomenon under investigation. On the one hand Rwanda occupies a top position on the United Nations E-Participation Index among African countries, yet demand-side barriers and hierarchical power dynamics hinder adoption. Two e-participation initiatives were studied to assess their effectiveness in citizen engagement and government responsiveness.

The dissertation builds on the following research questions:

RQ1: What are the key supply and demand-side drivers influencing e-participation? (Chapter 2 and Chapter 3)

RQ2: How does the interplay of e-participation drivers influence e-participation adoption? (Chapter 5)

RQ3: What drives meaningful e-participation outcomes in policy formulation and service delivery? (Chapter 5 and Chapter 6)

Against this backdrop, the dissertation seeks to answer the research questions and address the gaps in the literature by:

i) developing a consolidated theoretical framework, drawing from the e-participation literature, which integrates supply and demand-side drivers; (Chapter 4 and Chapter 6) and

ii) examining how the interaction between supply and demand-side factors shape the adoption and outcomes of e-participation initiatives; (Chapter 5 and Chapter 6)

1.4 Research Methodology

This section presents an overview of the research methodology, which adopts a mixed-methods approach, integrating both quantitative and qualitative techniques to address the research questions. Detailed data collection and analysis procedures are presented separately in the chapters on quantitative analysis and qualitative case studies (Chapter 3 and Chapter 4).

In Chapter 2 the study presents an analysis of the relevant e-participation literature, titled Literature Review. The dissertation leverages a scoping review of the e-participation academic literature spanning the years 2000 to 2025. Peer-reviewed academic publications in the literature are identified, mapped and evaluated for core theoretical models, key concepts and drivers for e-participation adoption and outcomes with focus on supply and demand-side perspectives and their intersection. The literature search was conducted in major academic databases, Scopus, Wiley Online Library, SpringerLink, selected for their comprehensive coverage of information systems, public administration, and social sciences. Advanced search functions in these databases allow for the use of logical operators (AND/OR), keywords, and time filters. The search focused on identifying e-participation, electronic participation, digital participation, e-government papers and articles. The identified publications were mapped according to their e-participation perspective (supply-side, demand-side, or integrative), the drivers and outcomes examined, and their methodological approach (qualitative, quantitative, or mixed methods). Emphasis was placed on both established adoption frameworks, such as TAM and UTAUT, institutional theory and newer collaborative governance, citizen-centric frameworks that stress the role of citizen engagement, input and feedback loops in shaping e-participation. To ensure comprehensiveness, backwards citation tracking was also used to identify seminal contributions that continue to shape the field.
The review of the e-participation literature was then used in Chapter 3 to develop a theoretical e-participation framework. The framework builds on concepts that are described in empirical studies as being associated with e-participation adoption, relying on TAM and UTAUT, institutional theory, and collaborative governance approaches. The framework integrates both supply and demand-side concepts, as outlined in the theoretical framework section to answer **RQ1: What are the key supply and demand-side drivers influencing e-participation?**

The framework is empirically tested using panel data from 2010 to 2022, drawn from Eurostat and other secondary sources, covering 20 European countries at the NUTS-2 level of the EU's Nomenclature of Territorial Units for Statistics, comprising 162 administrative entities. The impact of supply and demand-side factors and their interaction on e-participation adoption is statistically tested using multiple regression analysis. In addition, a longitudinal cluster analysis is employed to identify how adoption patterns evolved over time (see Chapter 3). As is well recognised, much of the existing evidence in research on e-participation relies on cross-sectional or short-term case

studies. Studying the European experience allows for conducting longitudinal research in e-participation. Scholars such as Macintosh, Coleman & Schneeberger (2009) and Medaglia (2012) explicitly highlight this gap, calling for time-series analyses to better capture how e-participation evolves over time. The diversity of the European continent in terms of levels of digital development, institutional arrangements and contextual and cultural factors provides a rich empirical basis for identifying patterns and differences across countries.

Informed by the literature and the quantitative findings, the thesis continues with an in-depth multiple-case study analysis which explores the phenomenon of e-participation in the context of an extreme case. The qualitative part of the dissertation answers: **RQ2: How does the interplay of e-participation drivers influence e-participation adoption? and RQ3: What drives meaningful e-participation outcomes in policy formulation and service delivery?** The case study design is appropriate to study the interaction of drivers and their influence on not only adoption but also meaningful e-participation outcomes. Rwanda is purposefully selected due to its complex and contrasting characteristics, which provide a rich empirical basis for analysis. On the one hand, Rwanda shows strong prioritization of e-participation within its national strategic agenda and occupies the top position on the United Nations E-Participation Index among African countries.[3] At the same time, different e-participation initiatives feature contrasting institutional arrangements and varying supply-demand dynamics that allow for a clearer examination of how collaborative governance practices shape the interaction of drivers and influence participation outcomes. The country has a complex development context characterized by post-conflict recovery and state-led development, alongside persistent socio-economic challenges. This duality highlights contradictory trends in participatory governance and digital divides.

The qualitative component of the dissertation focuses on two distinct initiatives, selected through purposeful sampling to represent different types of e-participation: the Citizens' Guide to the Budget, which centers on participatory planning and budget transparency, and Irembo.Gov, a platform for digital public service delivery. Following Yin's (2009) logic of replication, the cases are treated as individual units of analysis, enabling analytical insights that may contribute to broader theoretical understanding, without assuming uniformity across contexts. As such, each case is examined independently to gain deeper contextual understanding of how e-participation is conceptualized, designed, and implemented within its specific setting. The purpose is not to conduct a direct comparison between the cases, but rather to understand the diversity of experiences and institutional dynamics that shape e-participation adoption and outcomes in practice, with a specific focus on the interaction of the demand and supply perspectives.

The case studies answer calls in the literature for deeper case-based analysis. Reddick and Norris (2013) argue that e-participation research should make greater use of qualitative methods, such as case studies, to capture the impacts of digital participation in practice. Yet, most existing case

[3] *https://publicadministration.un.org/egovkb/en-us/Data-Center*

studies focus on a single activity, while analyses of platforms that enable different types of e-participation activities remain rare and largely testimonial.

Finally, the dissertation culminates in the Discussion chapter, which synthesizes the findings from the literature review, quantitative analysis, and qualitative case studies, and situates them within the broader e-participation literature. Building on these insights, the study revisits the E-participation Framework to conceptualize e-participation as a relational governance process shaped by the interaction of supply and demand-side drivers, and a number of pre-conditions. In particular, the framework highlights the importance of institutional willingness, asymmetries in power and influence between government and citizens, and the quality of the supply–demand interface in shaping not only adoption but also meaningful outcomes.

1.5 Structure of the dissertation

The dissertation is structured as follows. Chapter 1 introduces the motivation, research problem, aim and contribution of the study, with a particular focus on the two perspectives discussed in the e-participation literature. It further outlines the overarching research methodology, detailing the mixed-methods design, data sources, and analytical techniques used. Detailed data collection and analysis procedures are presented separately in the chapters on quantitative analysis and qualitative case studies. Chapter 2 provides a traditional literature review, examining existing theoretical and empirical work on e-participation from both supply and demand-side perspectives, and identifying key gaps addressed by this study. The chapter summarises the main trends in the e-participation literature. It begins by mapping the different traditions of e-participation and positions the focus of the dissertation within the intersection of participation and e-government research. The chapter then examines the challenges associated with e-participation adoption also highlighting trends emerging from the literature studying developing countries. The chapter then delves into the two dominant perspectives discussed in the literature: demand-side and supply-side, highlighting their importance and limitations, and makes a case for their integrated treatment. Finally, it develops a theoretical framework for e-participation adoption that centres on the intersection and interplay between demand and supply-side drivers.

Chapter 3 operationalizes the theoretical framework described in the literature review chapter to explore the influence of supply and demand-side variables on e-participation adoption in the context of Europe. The analysis applies a multiple regression analysis and a longitudinal cluster analysis. The work explores the variations in e-participation use and its drivers across European countries. This longitudinal and multi-country analysis uses panel data from 20 European countries for the 2010–2022 period to address a recognized gap in the literature, namely the limited availability of longitudinal, comparative studies that jointly examine demand-side drivers (such as digital skills, trust, and cultural factors) and supply-side conditions (including e-government performance and governance) in shaping e-participation adoption over time. (Pérez-Morote et al., 2020)

Chapter 4 details the qualitative methodology of the Rwandan case studies set within an extreme case setting to examine the interplay of supply and demand-side drivers that shape e-participation adoption and meaningful outcomes. Rwanda was purposefully selected as an extreme case (Patton, 2015), as it exhibits particularly pronounced characteristics of the phenomenon under investigation. On the one hand Rwanda occupies a top position on the United Nations E-Participation Index among African countries, yet demand-side barriers and other factors hinder adoption. To analyse the data the chapter utilizes thematic analysis to explore the dynamics of e-participation in Rwanda, through two cases: the Citizens' Guide to the Budget and Irembo.Gov. The approach leverages inductive coding methods to identify emerging themes and codes that supplement the deductive codebook derived from theory.

Chapter 5 presents the analysis and results from the two Rwandan cases offering contextual insights into how e-participation is adopted in practice and whether e-participation leads to meaningful outcomes. The analysis from the case studies indicates that e-participation in Rwanda remains in its formative stages, characterized primarily by government-driven initiatives that often position citizens more as recipients rather than active contributors to the policy making process. The country's strategic efforts in ICT and e-governance, while strong, still reflect a top-down approach in citizen engagement, which limits genuine participation. These trends are underscored by a cultural inclination towards obedience and centralism, making decentralized and citizen-driven participation challenging. At the same time, the cases reveal encouraging signs of progress. Irembo.Gov in particular demonstrates meaningful outcomes by becoming more responsive to user feedback and adapting to citizens' needs.

Chapter 6, the discussion chapter provides a synthesis that links the learnings and contributions from the longitudinal quantitative analysis in Europe and the in-depth qualitative case studies in Rwanda. The chapter outlines a more nuanced, cross-contextual understanding of e-participation and its drivers. The chapter outlines the key contributions that the dissertation makes: first, it establishes the centrality of demand-side drivers, by showing that they are as important as supply-side factors in shaping e-participation adoption and outcomes. Second, it reconceptualizes e-participation as the mediated interplay of supply and demand-side drivers, where outcomes are not determined by the drivers themselves, but by how their interaction is mediated, governed, and institutionalized. Third, it demonstrates that adoption does not necessarily translate into meaningful outcomes, and introduces a distinction between instrumental outcomes and transformative outcomes. Finally, these insights culminate in the presentation of a Revised E-participation Framework for Meaningful Outcomes, which views participation as a relational governance process shaped by a number of pre-conditions (institutional willingness and power dynamics) and the mediation quality of the supply-demand side interface.

Finally, Chapter 7 synthesizes the findings, discusses their implications for theory and practice, and offers conclusions and recommendations for policymakers and future research.

Chapter 2: Literature Review

This chapter summarises the main trends in the e-participation literature. It begins by mapping the field of e-participation and positions it within the intersection of participation and e-government research. The chapter then examines the trends and challenges associated with e-participation adoption and also highlights trends emerging from the literature studying developing countries. The chapter then delves into the two dominant perspectives discussed in the literature: demand-side and supply-side, highlighting their respective limitations and making a case for their integrated treatment. Finally, it develops a theoretical model for e-participation adoption that centres on the intersection and interplay between supply and demand-side drivers.

2.1 The e-participation literature

The e-participation literature has been sliced and diced in a variety of ways, reflecting its inherently multidimensional nature, which spans a wide range of disciplinary perspectives, conceptual domains, and analytical approaches. The concept of e-participation has its roots in multiple disciplinary traditions, including public administration, democratic theory, information systems, and communication studies. Within these traditions, scholars have generally distinguished between studies focusing on the supply-side of e-participation (institutions, platforms, and administrative capacities) and those focusing on demand-side (citizen willingness to engage, trust, attitudes, and digital skills, among others) (Pirannejad et al., 2019; Susha and Grönlund, 2012; Le Blanc, 2020). Additionally, research varies in its analytical focus, including design, implementation, adoption, diffusion, and evaluation of e-participation practices. Different studies are often grounded in different epistemological and methodological traditions, resulting in fragmentation between levels of analysis: macro (government) versus micro (citizens) (Steinbach, Sieweke, & Süß, 2019). As a result, the field is characterised by conceptual breadth and methodological plurality, which makes it analytically rich but also difficult to compare across studies or synthesise within a common conceptual framework.

E-participation as a concept emerged in the early 2000s, a period marked by growing concerns about declining institutional trust and limited responsiveness of traditional consultation mechanisms (Macintosh & Whyte, 2006; Medaglia, 2012). These concerns were rooted in broader governance transformations, including the top-down, transactional orientation of New Public Management (NPM) reforms, which contributed to perceptions of distance between citizens and public institutions (Pollitt & Bouckaert, 2011). Subsequent economic shocks, most notably the global financial crisis and austerity measures in Europe, further eroded trust and highlighted the limitations of existing channels for citizen voice, amplifying debates around democratic deficits (Royo et al., 2024; Mariani et al., 2024).

The evolution of e-participation has been predominantly documented in Western contexts. The European Union has played a central role in advancing e-participation, both by funding national-

level initiatives and by supporting research and practitioner networks such as DEMO-net, an eParticipation Network of Excellence, funded under the European Commission's Sixth Framework Program (Le Blanc, 2020). Initially, local government led e-participation dominated innovation within the field. In the United States, e-government had become widely established across all levels of government by 2008 (Reddick & Norris, 2013). The push toward e-participation accelerated rapidly with the Obama Administration's 2009 Open Government Directive, which prompted federal agencies and many local governments to introduce participatory features, ranging from online consultations to the integration of social media (Le Blanc, 2020; Mossberger et al., 2013). These developments built on longstanding legal requirements for public participation in policymaking, such as notice-and-comment rulemaking, which were themselves undergoing progressive digitization (Epstein et al., 2014).

In developing countries, the emergence and evolution of e-participation have unfolded under markedly different political and institutional conditions. Many governments have adopted digital participation tools in contexts of constrained administrative capacity, uneven digital infrastructures, and varying degrees of civic space (Heeks, 2008; Gigler & Bailur, 2014). Unlike advanced democracies, motivations in developing countries have tended to be more externally driven and strategic. Governments frequently promote e-participation to signal modernisation, follow donor expectations, improve performance in international e-government or governance rankings, or demonstrate progress toward public sector reform and digital transformation agendas (Schuppan, 2009; Dener et al., 2011). Yet despite these motivations, a substantial knowledge gap remains. Developing countries are significantly understudied, even though they offer a rich and diverse contextual terrain for understanding how e-participation functions in practice.

The concept of e-participation finds its theoretical foundation both in public administration and democratic governance theory. (Pirannejad, Janssen & Rezaei, 2019; Islam, 2008; Le Blanc, 2020; Medaglia, R., 2012). As a result, the field of e-participation reflects the convergence of e-government research (which stems from public administration) and e-democracy (rooted in participation and democratic governance) with information systems mediating the interaction between citizens and government through digital platforms and communication tools (Sæbø et al., 2008, p. 402).

From an e-government lens, early research focused primarily on governments' efforts to engage citizens in the design and delivery of public services, especially through information provision, online service portals, and feedback mechanisms (Pirannejad, Janssen & Rezaei, 2019). Rooted in public administration and information systems theory, e-government research emphasized how digital platforms enhance administrative efficiency, transparency, and responsiveness. Over time, e-government research has expanded to include policy-oriented forms of e-participation, such as online consultations, co-creation processes, and crowdsourcing ideas for improving public policies (Macintosh, 2004; Le Blanc, 2020). Within this lens, citizens are increasingly understood not

merely as service users but as stakeholders and co-creators of public services and policies (Bovaird & Löffler 2012; Gil-García & Pardo, 2005), highlighting a shift toward more collaborative and participatory models of digital governance.

From the e-democracy lens, rooted in participation and democratic governance theory, researchers study citizens' involvement in political processes, public discourse, and civic life and their role as political actors. Generally, participation scholarship focuses on both the engagement of citizens in political discourse and political agendas, as well as policy-making. Similarly the e-democracy literature includes both political and civic participation activities. Macintosh (2004) original definition defines e-democracy as the use of ICT to support democratic decision-making processes. This definition explicitly distinguishes e-voting (which is a digital electoral practice) from e-participation (which is linked to policy-making processes). Furthermore, Medaglia (2012) also considers both top-down and bottom-up initiatives as part of e-democracy.

As such, e-participation and e-democracy partially overlap. (Figure 1) With e-participation capturing ICT-enabled engagement in policy-related processes where traditionally government serves as the provider, while e-democracy includes a broader set of digital democratic activities that extend beyond the scope of e-participation and could be both top-down and bottom-up in nature. (Medaglia, 2012; Sæbø et al. 2008; Macintosh 2004) At their overlap, e-participation activities encompass participatory policy-making, that includes information dissemination about normative acts, policy consultations and agenda-setting, public deliberation, petitions, participatory budgeting. (Macintosh 2004; Sæbø et al., 2008; Freschi, Medaglia & Nørbjerg, 2009) The scope of e-participation also covers participatory design of public services and public service delivery. This continues to constitute a vital dimension of e-participation, which is originally rooted in the e-government tradition. (Macintosh, 2004; UN, 2014; Pirannejad, Janssen & Rezaei, 2019).

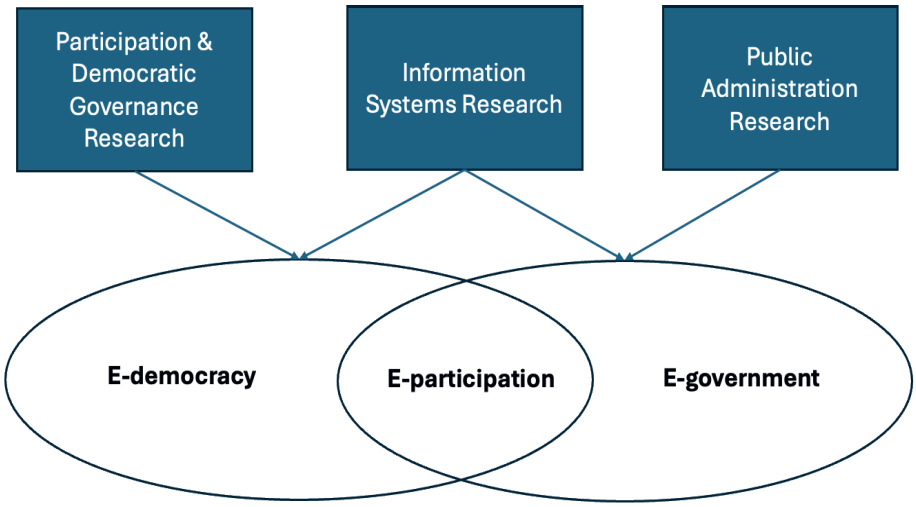
The level of e-participation has been studied through citizen–government interactions (Royo et al., 2024; Wijnhoven et al., 2015). These interactions span a spectrum and have increasingly evolved from considering citizens as passive recipients to citizens as partners or co-creators of public value (Linders, 2012; Layne & Lee, 2001). The literature employs several typologies to classify levels of e-participation. Some authors adapt Arnstein's 5-step participation ladder (Arnstein, 1969; Tambouris et al., 2007). Many e-participation scholars rely on a more streamlined three-level model (Le Blanc, 2022). This common framework distinguishes between e-information provision (where government disseminates information to citizens through websites and other digital mediums), e-consultation (where government seeks citizen views on policies or services, often with some form of feedback), and e-decision-making (where citizens are directly involved in shaping decisions, policies, agendas or co-producing outcomes). The three- tier system is also adopted by the UN E-Government Survey.

- **E-information:** Enabling participation by providing citizens with public information and access to information without or upon demand. The information could be distributed via websites, online newsletters, forums, blogs, community networks, text messaging, email, open data or other services.

- **E-consultation:** Engaging citizens in contributions to and deliberation on public policies and services. For example, policymakers may report on the outcome of dialogue with citizens by summarizing various stakeholders' positions and announcing a way forward. Relevant e-government tools include feedback forms, polls, surveys, chat rooms, blogs, social networks, newsgroups, focus groups, and other interactive services that facilitate engagement.
- **E-decision-making:** Empowering citizens through co-design of policy options and co-production of service components and delivery modalities. Governments elicit engagement and input from citizens and businesses on government proposals. Example: agenda setting, budgeting initiatives encourage citizens' participation in the definition of investment proposals for the budget; identification and voting for government projects and government priorities online etc.

Figure 1 illustrates how e-participation research is situated at the intersection of e-government and e-democracy, highlighting the activities that fall within this overlap, such as information provision, consultations, agenda-setting, deliberation, and participatory decision-making. The figure also indicates different levels of engagement, showing how e-participation initiatives range from low-intensity information sharing to higher-intensity collaborative policy-making.

Figure 1: Map of E-participation research at the intersection of e-government and e-democracy.



Level of Engagement/Research field	E-democracy	E-participation	E-government
E-information	Political party websites; Civic awareness	Provision of information laws, policies and services	Government portals and digital service websites
E-consultation	Campaign platforms;	E-consultations on draft policies and services; E-petitions	User feedback, service improvement consultations
E-decision making	Online referenda; E-voting, m-voting	Participatory budgeting; co-creation of policies and services	Co-production of public services, collaborative governance

Source: Author's elaborations based on existing literature

Within each field of research, scholars have analysed e-participation through either a supply-side or demand-side lens (Le Blanc, 2022; Medaglia, 2012; Ingrams et al., 2020). The supply-side perspective examines government-led or top-down dimensions of e-participation, focusing on the technological, administrative, and institutional capacities that enable participation, such as platform design, ICT infrastructure, organisational arrangements, and the responsiveness of public authorities (Al-Dalou & Abu-Shanab, 2013; Avdic et al., 2007; Gil-García & Pardo, 2005).

The demand-side perspective concentrates on the factors that shape citizens' willingness and ability to engage with the government digitally. This tradition draws on models of technology acceptance and civic behaviour, highlighting the role of trust, attitudes, perceived usefulness, ease of use, digital skills, and broader societal norms in influencing citizen adoption (Venkatesh et al., 2003).

2.1.1 E-participation trends and challenges

The literature recognises e-participation as a vital tool for enhancing transparency, and improving the responsiveness of public institutions. Reported benefits include enhancing the effectiveness of policy formulation by amplifying citizens' agency and voice, improving government understanding of public needs and preferences, increasing the legitimacy of decision-making processes, and fostering greater trust in public institutions (Åström et al., 2012). Citizen engagement is also regarded as a key driver of e-government development, with e-participation serving as one of its principal mechanisms (Macintosh, 2004; Medaglia, 2012). Moreover, e-participation is frequently associated with promoting inclusive governance by enabling the involvement of all citizens, including traditionally underrepresented groups (Wampler, 2007; Rowe and Frewer, 2000).

Despite these well-theorised benefits, the actual use of e-participation initiatives and the achievement of their intended outcomes remain limited, uneven, and highly context specific. The United Nations E-Participation Index (EPI) - part of the UN E-Government Survey - ranks countries based on the availability of e-participation platforms and portals. While widely cited, the EPI provides a supply-side perspective, focusing on government-provided infrastructure without capturing user adoption or the underlying factors influencing citizen engagement. As such, it does not indicate whether high rankings correspond to uptake or meaningful outcomes (Le Blanc, 2022; Pirannejad, Janssen, & Rezaei, 2019).

Similar trends emerge in other datasets. Eurostat (2023) reports that while nearly 70% of EU citizens interact with public authorities online, only 8.5% of individuals aged 16–74 engage in online consultations or voting, such as participating in urban planning processes or signing petitions. At the level of specific initiatives, studies document platforms that attract very low levels of participation or fail to sustain citizen interest over time (Saebø et al., 2011; Mariani et al., 2024). Even highly advanced e-government countries such as Estonia, often promoted as global leaders, have experienced setbacks. For example, Toots (2019) assesses the national e-participation platform Osale.ee as a failure, citing government reports that reach similar conclusions (Mariani et al., 2024).

Steinbach, Sieweke and Süß (2019) carry out a systematic literature review which categorizes the e-participation literature along several analytical strands: adoption, implementation, diffusion, and

evaluation. Adoption studies investigate the drivers and barriers influencing e-participation adoption (Macintosh & Whyte, 2006; Medaglia, 2012). Implementation research focuses on how e-participation tools are embedded into institutional and administrative processes, highlighting issues of change management, interdepartmental coordination, and the alignment of platform design with policy objectives (Medaglia, 2012). Diffusion studies investigate the spread, scaling, and institutionalization of e-participation practices across levels of government and contexts, emphasizing the role of political commitment, organizational learning, and feedback loops in sustaining engagement (Norris & Reddick, 2013).

A significant cross-section of the literature has been dedicated to the challenges and barriers of e-participation adoption. The literature identifies political, institutional, technological, and social dimensions (Oliveira & Garcia, 2019; Mariani et al., 2024). These range from questions of responsiveness, legitimacy and representativeness, to capacity constraints among both public officials and citizens, to shortcomings in process design and tool functionality. Even in countries with advanced e-government infrastructures, many platforms struggle to attract and sustain meaningful participation, underscoring that the availability of digital channels alone is insufficient to ensure their effective use or policy impact (Mariani et al., 2024).

Royo et al. (2024) discusses the "critical importance of linking e-participation initiatives with formal institutional processes" or the institutionalization of e-participation. This proves important in ascertaining that e-participation leads to tangible outcomes and that citizen input factors into government's decision making. Closing the loop is also vital for people to perceive that their participation has an impact (Steinbach, Sieweke, & Süß, 2019). Yet there is limited research on how to design effective feedback mechanisms and dissemination campaigns and integrate them systematically into policy processes. Existing studies suggest that without clear evidence of influence, initiatives risk being perceived as tokenistic "democracy-washing" and citizens may become disengaged (Mariani et al., 2024). Hoppe (2011) underscores that dissemination is one of key outputs of a participatory process, where poor dissemination compromises accountability to the public. In principle the more extensive use of ICT should improve publicity and transparency of participatory institutions. Empirical examination of this issue remains limited to support broad generalizations.

Another set of challenges concerns representativeness, inclusiveness, and equity (Medaglia, 2012). Concerns over bias, unrepresentative samples, and credibility can limit the weight given to citizen input in policymaking. Digital platforms often exhibit demographic biases toward technologically adept or more engaged groups (Macintosh, 2004). Achieving diversity of voices, balancing representative and direct democracy, and ensuring equity remain unresolved issues (Borge et. al, 2022). Effective e-participation also requires new skills among both civil servants and citizens (Bovaird, 2007; Choi & Song, 2020). Public officials need to act as facilitators and collaborators rather than solely administrators, while citizens must be equipped to contribute meaningfully

(Bovaird, 2007). Gaps in digital literacy, information literacy, and access to technology (OECD, 2004) hinder participation, especially in contexts where such engagement is not habitual.

The appropriateness of using e-participation across policy stages adds another complexity. Process design and timing are other critical factors. Participatory processes can be undermined when stakeholder engagement occurs too late in the policy cycle (Wirtz et al., 2018; OECD, 2020). The suitability of participation tools depends on the policy issue, context, and the balance between deliberative and aggregative models (Rowe & Frewer, 2000). Tool design and methodological gaps further limit impact. Current e-participation tools often focus on interactive communication rather than early-stage idea generation (Steinbach, Sieweke, & Süß, 2019). Design features, such as opportunities for anonymity, interaction with decision-makers, and accessible information, affect citizen motivation (Mitozo & Marques, 2019). Poor alignment between platform design and user expectations contributes to declining engagement over time (Font & Navarro, 2013; Sæbø et al., 2011; Marzouki et al., 2022).

From the citizen perspective, Oliveira and Garcia (2019) identify 15 critical barriers, including digital and information illiteracy; poor infrastructure and access inequalities; low trust in politicians and misalignment between discussion topics and citizens' priorities; privacy concerns and unclear communication; lack of awareness of participation opportunities; and transparency gaps. They also note "lurking" behaviour, where citizens prefer to observe rather than actively contribute.

2.2 The Supply and Demand-side perspectives; their limitations and their interplay

E-participation research has traditionally evolved along two main strands: the demand-side perspective, which focuses on citizens as users of e-participation tools, and the supply-side perspective, which examines government capacity, institutional readiness, and technological provision. Existing literature often privileges technological availability on the supply-side and socio-economic factors and individual perceptions on the demand-side, limiting holistic understanding of what drives adoption and outcomes of e-participation initiatives.

Research that focuses on e-participation from a supply-side perspective centers on the technological, institutional, and organizational configurations that enable e-participation through websites, platforms, and frameworks (Al-Dalou & Abu-Shanab, 2013; Avdic et al., 2007). Supply-side factors are essential as they highlight the institutional and technical readiness, governance arrangements, and administrative capacities that determine whether digital participation channels can meaningfully engage citizens. Beyond technical factors focusing on platform design and facilitating organizational factors, the supply-side carries the responsibility of ensuring sustained political commitment and the integration of participation mechanisms into policy processes. Without such institutional anchoring, even high levels of citizen willingness or engagement may

fail to translate into tangible outcomes (Macintosh & Whyte, 2006; Sæbø, Rose & Flak, 2008, Toots, 2019; Medaglia, 2012).

This body of research often evaluates platform availability and technical functionality, relying on macro-level indicators that obscure actual uptake of e-participation initiatives or their societal value (Boudjelida et al., 2016; Pirannejad et al., 2019). Moreover, e-participation may appear to be enabled or informed by citizens, when in reality that is not always the case. The process of mobilizing and transforming citizen input into public value creation is often suboptimal, fragmented, or weakly embedded in institutional routines (Zheng, 2015; Osborne & Strokosch, 2013).

Demand-side studies emphasize citizens' willingness to engage online, and investigate individual drivers such as perceived usefulness, and ease of use of technology, subjective norms, trust, digital skills and socio-economic factors (Venkatesh et al., 2003; Carter & Bélanger, 2005). This perspective is crucial because even the best-designed platforms cannot generate participation without citizens who are motivated, aware, capable, and confident in the value of engaging.

Recent scholarship argues that demand-side drivers of e-participation are also deeply embedded in broader social and cultural contexts and should not be reduced to individual attitudes or technological perceptions, as is the case in much of the literature (Randma-Liiv & Vooglaid, 2019). Understanding what drives engagement therefore requires attention to who participates, why, and under what social and cultural conditions, factors that shape whether participation is seen as meaningful, legitimate, or worthwhile. Such studies also lack nuances on the depth, authenticity and outcome of citizen e-participation, despite the wide emphasis on framing citizens as stakeholders and co-creators of e-participation (Gil-García & Pardo, 2005).

Few studies focus on e-participation from both the supply and demand-side perspective, highlighting the synergy between government and citizen engagement. (Macintosh & Whyte, 2006; Marzouki et al., 2022) Such studies argue that e-participation effectiveness is contingent on addressing multi-dimensional issues, spanning technological, political, organizational, and social drivers, that interact in complex ways across contexts, underscoring the need for a holistic approach.

In developing countries, examining both supply and demand-side drivers of e-participation is essential because the adoption and outcomes of digital engagement tools is highly influenced by structural asymmetries in government capacity, citizen readiness, and broader contextual factors that are often overlooked in the literature. On the supply-side, governments may struggle with limited resources, uneven ICT infrastructure, weak inter-agency coordination, and fluctuating political commitment, all of which shape the design, accessibility, and credibility of participation platforms (Bannister & Connolly, 2015; Gigler & Bailur, 2014; McCall & Dunn, 2012). At the same time, demand-side constraints such as low digital literacy, socio-economic inequalities, distrust in government, and limited participatory culture influence citizens' ability and willingness

to engage meaningfully online (van Dijk, 2006; Norris & Inglehart, 2019). Contextually, this group of countries has different political regimes, governance quality, social norms, linguistic diversity, digital and rural-urban divides that condition how both supply and demand drivers interact making the study of these countries highly context specific. Such heterogeneity also complicates efforts to generalize across developing countries, as the factors influencing e-participation adoption and outcomes operate and interact differently across settings (Peixoto & Sifry, 2017; Le Blanc, 2020).

2.2.1. Collaborative Governance as mediator of the Supply-Demand side Interplay

More recently, a growing body of work has examined citizens as co-creators in e-participation systems, drawing on collaborative governance, co-production theory (Ostrom, 1996; Meijer, 2012) and design thinking approaches (Clarke & Craft, 2019; Mariani et al, 2024). Such studies stress the need to bridge government provision of e-participation tools with citizen adoption through iterative engagement, inclusiveness, responsiveness, deliberation quality and institutionalization of input (Osborne & Strokosch, 2013; Rowe & Watermeyer, 2018). Institutionalizing citizen input within technological design and organization processes empowers citizens, reinforces trust and legitimacy, and creates a virtuous circle that fosters long-term citizen participation (Royo et al., 2024).

Such studies highlight the importance of deliberative quality and feedback loops in ensuring sustained engagement of citizens in the e-participation process. For example, Medaglia (2012) notes that the absence of institutionalized feedback mechanisms undermines long-term trust in participatory systems, while Peixoto and Fox (2016) emphasize that ICT-enabled participation is only effective when governments demonstrate visible responsiveness. Similarly, Peixoto and Sifry (2017) argue that without closing the feedback loop, digital platforms risk creating frustration rather than empowerment.

In addition, contextual and socio-political factors strongly shape the dynamics and interplay of supply and demand-side factors. Mitozo and Marques (2019), in their study of Brazil's Portal e-Democracia, show that the issue at stake and the socio-political context matter more for deliberation quality than platform design features. Likewise, Hofstede's cultural dimensions (Hofstede, 2001; Jan et al., 2024) and comparative work on non-democratic contexts (Åström et al., 2012) underscore that participation practices are mediated by cultural norms, authority structures, and political institutions. These findings resonate with research on hybrid models of participation (Chadwick, 2006; Smith, 2009), which demonstrate that institutional legacies and political environments often determine whether citizens are genuinely empowered as co-creators or remain positioned as passive recipients.

Together, this body of research, while often favoring a supply-side lens that brings citizens into what public service providers are already doing (Loeffler & Bovaird, 2021), presents a more

balanced view of citizen-government dynamics. Yet, this literature is criticised for presenting an idealized view of collaboration, assuming citizens and government actors participate on equal terms. Such approaches may downplay cultural factors, power imbalances, bureaucratic resistance, and institutional constraints (Clarke & Craft, 2019).

Thus, collaborative governance and co-production scholarship provides a more explicit conceptualization of how the interaction between citizens and government is structured and mediated. In particular, Ansell & Gash (2008) emphasises that collaboration unfolds through iterative, deliberative processes, where dialogue, trust-building, and shared understanding are not automatic outcomes of participation mechanisms, but are actively shaped by institutional design and facilitative leadership. Central to this perspective is the recognition that interaction requires mediation, both in the form of formal rules and procedures and through actors who enable, translate, and sustain engagement.

Similarly, co-production theory, particularly Bovaird (2007), highlights that public value emerges through reciprocal relationships between service providers and users, where the quality of interaction depends on the capacities, incentives, and roles assigned to each actor. This perspective underscores that citizen participation is not simply a function of demand, but is shaped by how institutions organize and support co-productive engagement.

From an interactive governance perspective, Sørensen & Torfing (2016), further conceptualize governance as taking place within arenas of interaction, where multiple actors engage in negotiation, deliberation, and joint problem-solving. Within these arenas, mediation becomes central: governance outcomes depend on how interaction is structured, who participates, how power is distributed, and whether processes are inclusive and facilitative. This shifts the focus from the mere availability of participatory platforms to the quality of mediation that shapes how supply- and demand-side actors engage.

Taken together, these perspectives point to the importance of institutional mediation in shaping the interplay between supply and demand-side drivers, an aspect that remains insufficiently theorized in existing e-participation research.

2.3 Theoretical models and their limitations

One of the key limitations in the e-participation adoption literature is that theoretical models for supply and demand-side perspectives are often grounded in different epistemological and methodological traditions. This divergence presents a significant challenge to integrating these perspectives into a single, coherent analytical framework. (Macintosh & Whyte, 2006; Medaglia, 2012; Steinbach, Sieweke, and Süß, 2019)

The supply-side determinants of e-participation adoption are most commonly analyzed through the Technology Organization Environment (TOE) framework (Tornatzky & Fleischer, 1990). TOE

conceptualizes adoption as a function of technological capabilities, organizational capacity, and environmental pressures, providing a structured lens for examining government readiness and implementation strategies. In e-participation research, the technological dimension encompasses ICT infrastructure, platform quality, and interoperability; the organizational dimension includes leadership support, resources, and administrative culture; and the environmental dimension covers legal frameworks, political incentives, citizen demand signals, and international benchmarks (Yavuz & Welch, 2014; Baker, 2012).

TOE has been criticized for its broad and generic nature, which can lead to inconsistent operationalization and limit comparability across studies (Oliveira & Martins, 2011). In addition, its focus on adoption determinants may overlook the iterative and post-adoption dynamics characteristic of e-participation initiatives, while also underrepresenting social, cultural, and human factors shaping technology use in public sector contexts (Baker, 2012; Gil-Garcia & Pardo, 2005).

Demand-side adoption has traditionally been examined through frameworks such as the Technology Acceptance Model (TAM) (Davis, 1989), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), and their various extensions. These models emphasize core determinants such as perceived usefulness and perceived ease of use, alongside trust, digital skills, facilitating conditions, social influence, political efficacy, and cultural or socio-economic factors, as critical predictors of adoption. Demand-side models focus on micro-level factors such as individual behaviors, attitudes and perceptions relying predominantly on quantitative survey data producing robust statistical association, but often at the expense of capturing contextual dynamics or long-term patterns of citizen engagement.

This difference in theoretical approaches results in a disconnect between levels of analysis: macro (government) versus micro (citizens) - as well as disciplinary boundaries. Supply-side studies often emerge from political science or public administration, whereas demand-side research is rooted in psychology, sociology, or communication studies. As a result, relatively few studies adopt mixed-methods or comparative approaches that can capture the interaction between supply and demand in a meaningful way.

Fragmentation is widely recognized in literature. Medaglia (2012) calls for “more integrative approaches that consider both institutional and user-centric perspectives.” Steinbach, Sieweke, and Süß (2019) note the multi-level approach used in e-participation studies, highlighting that connections across levels are seldom made, limiting understanding of how macro (structural conditions), meso (organizational capacities), and micro (individual motivations) jointly influence e-participation outcomes. Similarly, Susha and Grönlund (2012) note that “user studies and system studies have grown in parallel,” highlighting the need for convergence. Pirannejad et al. (2019) argue that “e-participation studies are often either supply- or demand-driven and rarely attempt to reconcile the two conceptually or empirically.” Le Blanc (2020) echoes this concern, emphasizing

the difficulty of drawing policy conclusions from a literature base that “analyzes participation either from the citizen or government point of view, but seldom both.” Norris and Reddick (2013) observe, the overall status of e-participation adoption research remains confusing. This gap limits the ability to explain how government readiness conditions interact with citizen motivations to influence adoption outcomes.

An emerging body of literature on co-production and co-creation offers a potential bridge between supply and demand-side perspectives by explicitly positioning citizen input as the connective mechanism linking government provision and citizen uptake. Co-production theory, particularly the work of Bovaird (2007) and subsequent contributions (Ostrom, 1996; Meijer, 2012), emphasizes that public value is generated through the joint contributions of providers and users, grounded in reciprocal relationships and shared responsibility for outcomes.

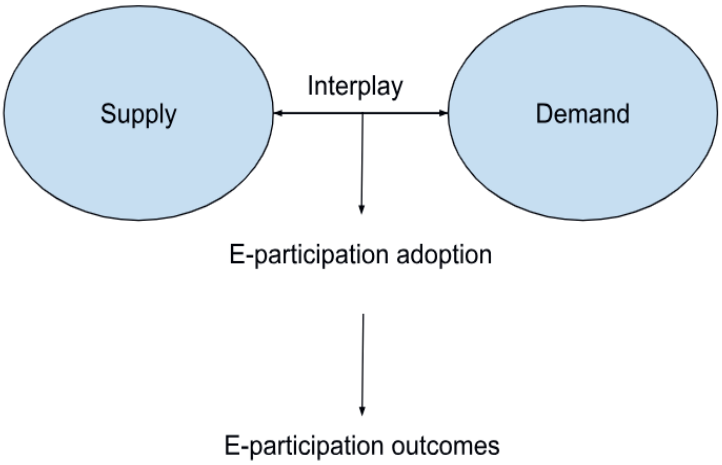
Complementing this, collaborative governance frameworks, particularly Ansell and Gash (2008) and Emerson et al. 's (2012), conceptualize participation as an iterative and dynamic process in which dialogue, trust-building, and shared understanding evolve through repeated interaction. These frameworks are shaped by strong communication channels, feedback loops, institutional design and facilitative leadership. Together, these perspectives highlight that the effectiveness of e-participation depends not only on the availability of technological platforms or individual willingness to use them, but on the quality of mediated interaction between actors. This interaction is structured through mechanisms such as feedback loops, deliberative processes, and the role of intermediaries, which enable, translate, and sustain engagement over time. Citizen engagement is therefore not merely an input into the system, but a constitutive element of a dynamic, relational process that shapes platform design, institutional responsiveness, and ultimately, participation outcomes.

2.4 Theoretical E-participation Framework

The dissertation builds on the e-participation literature to propose a consolidated theoretical framework for e-participation adoption. The framework draws on key theoretical models including TAM, UTAUT, institutional theory, and collaborative governance approaches. It is intended to serve as the analytical lens for the subsequent empirical chapters Chapter 3 and Chapter 5. Specifically, it will guide the quantitative analysis to test the influence of supply and demand-side drivers on e-participation adoption, and be used in the qualitative analysis to explore the complex interplay of factors through developing country case studies.

At its core, the framework conceptualizes e-participation as emerging from the interaction between supply-side institutional efforts and demand-side citizen engagement, mediated through collaborative governance processes. In its most simplified form, the framework can be represented as follows:

Figure 2: Theoretical E-participation Framework



Source: Authors' elaboration based on the literature

Within this research, I adopt a definition of E-participation adoption as a concept, being "the degree to which citizens engage with digital tools of e-participation, giving e-participation meaning and value" (Zheng, 2015). E-participation can be considered effective and fulfilling its purpose only if citizens adopt it (Zheng, 2015).

Moreover, I support the statement by Fung (2015) that E-participation is considered meaningful when it produces tangible outcomes in governance, particularly by shaping policy and improving service delivery. Engagement must move beyond symbolic involvement to influence decisions and service design (Osborne & Strokosch, 2013; Rowe & Frewer, 2005). The literature distinguishes between instrumental outcomes (efficiency gains, cost reduction etc.) and transformative outcomes (empowerment, institutionalized citizen voice etc.) (Macintosh, 2004; Medaglia, 2012; Sæbø, Rose & Flak, 2008).

A review of the literature leads to a select set of drivers of e-participation within the Supply and Demand-side Dimension

Supply-Side Dimension

E-government Performance relates to the availability, design, and functionality of digital platforms, underpinned by technological, institutional, and organizational arrangements (Al-Dalou & Abu-Shanab, 2013; Avdic et al., 2007). The availability of digital platforms does not guarantee participation (Zheng, 2015). In addition to the technical aspects, Randma-Liiv & Vooglaid (2019), emphasize that the organizational setup, process design, managerial quality, responsiveness and

allocated resources play a crucial role in ensuring adoption and long-term sustainability of e-participation platforms.

Governance Quality. Numerous studies point to the importance of institutional quality and credibility for the success of e-participation initiatives (Chadwick, 2006; Åström et al., 2012; Randma-Liiv, 2019). The critical challenge lies in linking e-participation initiatives to formal institutional processes (Royo et al., 2024). Political control, leadership and accountability towards citizens make the diffusion of e-participation in public administrations more complex (Steinbach et al., 2019). Hofstede et al. (2010) and Heeks & Bailur (2007) explicitly link high "power distance" and hierarchical governance traditions to reduced openness for participatory and citizen-driven processes. Peixoto & Fox (2016) find that many e-participation initiatives fail because they do not communicate back to citizens, creating a participation–impact gap.

Demand-Side Dimension

Willingness to Use refers to citizens' predisposition or intention to engage with the government digitally. The concept is multidimensional and is analyzed through the TAM and UTAUT models. Willingness is highly context-specific and could be influenced by a multitude of factors: perceived usefulness and ease of use, the presence of facilitating conditions, subjective norms, and broader socio-economic determinants (Venkatesh et al., 2003; Carter & Bélanger, 2005; Mertes et al, 2022; Vicente & Novo, 2014; van Deursen & van Dijk, 2011). These factors often interact in a variety of ways across different users and contexts and make this driver difficult to generalize.

Trust in Government, defined as the perception of the government's integrity and competence (Bélanger & Carter, 2008), is a critical factor in e-participation adoption. In digital governance, trust has expanded to encompass data privacy, platform security, and institutional reliability (Pérez-Morote et al., 2020). Studies have consistently shown that higher levels of trust in government and its agencies lead to increased acceptance and use of e-government services (Papadopoulou, Nikolaidou & Martakos, 2010). Other studies discuss the influence on e-participation adoption from the perspective of both trust in technology and trust in government. Nam (2014) argues that for e-government service use, trust in government may be more important than trust in technology, given the gap between a higher level of trust in technology and a lower level of trust in government (Sweeney, 2007). The assumption is that trust in government influences the adoption of e-participation by citizens.

Cultural Values also shape citizens' predispositions toward e-government adoption, yet the literature on this is relatively limited. Kumar et al. (2020) investigate whether countries holding more progressive ideals vs those holding more conservative views are more prone to adopting e-government, finding that countries conforming to tradition and conservative ideals have shorter orientation and are less susceptible to change and the adoption of new technology. Similarly,

Alomari et al. (2012) finds that cultural and religious beliefs in Jordan are more influential than typical TAM predictors. Other studies have explored “power distance” and individualism/collectivism drivers in shaping users’ technology acceptance behaviors (Hofstede et al., 2010; Jan et al., 2024). In general, people from societies with high power distance tend to accept and expect unequal distribution of power (Jan et al., 2024). In collectivist societies, adoption of technology tends to depend on group norms, peer influence and authoritative figures rather than individual attitudes. Individualistic contexts tend to foster autonomy in technology use, enhancing acceptance and innovation readiness (Hofstede et al., 2010). Some scholars emphasize that cultural readiness, rooted in openness, civic participation, and technology acceptance are factors influencing adoption (Panopoulou, Tambouris, & Tarabanis, 2014 and Steinbach et al, 2019).

Digital Skills refer to the ability to access, understand, and effectively use digital technologies. They encompass both basic competencies, such as navigating websites or using email, and more advanced abilities like engaging with interactive platforms and evaluating online content (van Deursen & van Dijk, 2011). The literature consistently identifies digital skills as a critical enabler of e-participation, as individuals lacking such competencies are less likely to access or benefit from digital government services (Cruz-Jesus et al., 2012).

Citizen Input refers to the contributions, preferences, and feedback that individuals provide to the government through participatory engagement mechanisms, both online and offline. Within collaborative governance and co-production theory, citizen input is conceptualized as a central mechanism through which citizens act as collaborators in the design, delivery, and evaluation of public services and digital participation platforms (Bovaird, 2007; Meijer, 2012; Nabatchi, Sancino & Sicilia, 2017; Voorberg, Bekkers & Tummers, 2015).

From this perspective, citizen input represents a key interface through which supply-side (e-participation providers) and demand-side (users) engage in e-participation. It is understood as a dynamic and structured interaction between unfolding through participatory processes and mediated by government actors through collaborative governance practices.

High-quality input, characterized by relevance, representativeness, and deliberation quality, is more likely to inform policy (Rowe & Frewer, 2005; Macintosh, 2004). In some contexts, citizen input often reflects broader civic engagement patterns, where citizens that are active offline, including by voting or signing petitions are more likely to participate online (Dimitrova & Chen, 2006). The literature warns against citizens "disengagement” and “disillusionment", when e-participation fails to demonstrate impact, reducing participation to a formality (Medaglia, 2012; Heeks & Bailur, 2007).

Social media platforms constitute an important digital participation channel for citizens that facilitates information sharing, free expression, interaction, and mobilization, and their use has been found to significantly predict e-participation (Vicente & Novo, 2014).

Table 1: Key Drivers of E-Participation Adoption: Supply and Demand Perspectives

Concepts	Constructs	Key Sources
E-Participation Outcomes	E-participation is considered meaningful when it produces tangible outcomes in governance, particularly by shaping policy and improving service delivery. Instrumental outcomes (efficiency gains, cost reduction, etc.) and Transformative outcomes (empowerment, institutionalized citizen voice, etc.);	Fung (2015); Osborne & Strokosch (2013); Rowe & Frewer (2005); Macintosh (2004); Medaglia (2012); Sæbø, Rose & Flak (2008)
E-Participation Adoption	Degree of citizen engagement with digital tools of e-participation, giving e-participation meaning and value; Frequency of platform use.	Zheng (2015)
Supply-side drivers		
E-Government Performance	Platform availability, design, and functionality; ICT infrastructure; usability; interactivity; integration into processes; organizational setup; process design; managerial quality; responsiveness; resource allocation.	Al-Dalou & Abu-Shanab (2013); Avdic et al. (2007); Zheng (2015); Randma-Liiv & Vooglaid (2019)
Governance Quality	Institutional credibility and quality; rule of law; leadership; accountability; responsiveness; linkage to formal processes; impact communication; political control.	Chadwick (2006); Åström et al. (2012); Randma-Liiv (2022); Royo et al. (2024); Steinbach et al. (2019); Hofstede et al. (2010); Heeks & Bailur (2007); Peixoto & Fox (2016)
Demand-side drivers		
Trust in Government	Trust in government; trust in agencies; trust in technology; perceived integrity; perceived competence; data security and privacy concerns.	Bélanger & Carter (2008); Pérez-Morote et al. (2020); Papadopoulou, Nikolaidou & Martakos (2010); Nam (2014)
Willingness to Use	Intention or predisposition to engage; influenced by perceived usefulness, perceived ease of use, facilitating conditions, subjective norms, socio-economic	Venkatesh et al. (2003); Carter & Bélanger (2005); Mertes et al. (2022); Vicente & Novo (2014)

	determinants, responsiveness, and civic motivation.	
Cultural Values	Cultural dimensions (e.g., power distance, uncertainty avoidance, individualism–collectivism); conservatism vs. progressivism; openness to change.	Hofstede et al. (2010); Alomari et al. (2012); Panopoulou, Tambouris & Tarabanis (2014); Steinbach et al. (2019)
Digital Skills	Basic ICT skills; information literacy; online communication skills; problem-solving in digital environments.	van Deursen & van Dijk (2011); Cruz-Jesus et al. (2012)
Citizen Input	Contributions and feedback via participatory mechanisms; co-production and collaboration; deliberation quality (relevance, representativeness); offline–online civic linkages; social media engagement; risks of disengagement/disillusionment.	Bovaird (2007); Meijer (2012); Rowe & Frewer (2005); Macintosh (2004); Dimitrova & Chen (2006); Vicente & Novo (2014); Medaglia (2012); Heeks & Bailur (2007)

2.5. E-participation in developing country context

Developing countries provide a particularly rich analytical context for examining collaborative governance dynamics in e-participation. Collaborative governance provides a framework to study the interaction between government institutions and citizens, highlighting the importance of trust, institutional responsiveness, inclusiveness, capacity, and continuous feedback loops in shaping participation outcomes (Ansell & Gash, 2008; Emerson, Nabatchi, & Balogh, 2012).

These dimensions become especially salient in developing countries, where institutional constraints often intensify the relational dynamics between supply and demand-side conditions. Unlike more advanced economies, e-participation outcomes in developing countries are less likely to depend on technological provision alone and are more likely to be shaped by a number of additional contextual, institutional and organizational factors. For example, developing countries often rely more heavily on intermediaries, civil society organizations, local networks, and hybrid online–offline participation mechanisms to bridge gaps in capacity and access. (Gigler & Bailur, 2014; Peixoto & Fox, 2016) This creates an environment where the interaction between institutional provision and citizen engagement becomes central to understanding participation outcomes. Consequently, developing countries offer a valuable setting for analysing how collaborative governance processes operate under conditions of institutional constraint, resource asymmetry, and uneven state–society relations.

Most empirical and comparative studies focus on advanced democracies, where digital infrastructures, civic freedoms, and institutional capacities are stronger. Evidence from developing countries, with less solid infrastructure, mixed levels of civic freedom and on average lower institutional capacities, remains fragmented and limited (Medaglia, 2012; Ohemeng & Ofosu-Adarkwa, 2015). This imbalance means that the literature often relies on assumptions derived from developed-country settings, which may not hold in environments with different political, social, and institutional realities.

Developing countries also face limited e-participation adoption that can be attributed to political, institutional, technological, and social factors that constrain both citizens' ability and motivation to engage. As Adnan (2022) observes, participation rates in many low- and middle-income countries are inconsistent and often fail to deliver the intended governance outcomes.

Institutional and infrastructure barriers are among the most frequently cited supply-side constraints in developing countries. Weak ICT infrastructure, unequal internet access, low-quality service design, and limited institutional support are recurrent issues (Medaglia, 2012; Heeks, 2002; Peixoto & Fox, 2016). Similar concerns are highlighted by Bwalya (2018), who points to structural and infrastructural barriers in African contexts and Peixoto & Fox (2016) who highlights the need for responsiveness and closing the feedback loops. Gigler and Bailur (2014), note that digital participation initiatives in developing countries often fail to move beyond pilot projects or donor-driven experiments, emphasising the importance of context-sensitive approaches to ensure digital participation meaningfully contributes to development.

On the demand-side, the literature identifies factors such trust, cultural values, perceived usefulness, and social norms which strongly influence willingness to participate. These findings echo Alomari et al. (2012), who argue that in developing country contexts cultural values and trust can override technical considerations within core Technology Acceptance Model (TAM) determinants. In a case study of e-participation in Saudi Arabia, Alharbi, Kang, and Hawryszkiewycz (2016) show that both trust in government and social influence significantly shape adoption behaviour. Where citizens lack trust in institutions or doubt the impact of their engagement, uptake remains low regardless of technical provision.

Motivations among government officials to adopt e-participation tools differ significantly between developed and developing contexts. In developed countries, adoption is frequently driven by strategic objectives such as policy innovation, open government, and citizen empowerment (Gil-García & Pardo, 2005; Macintosh, 2004). In many developing contexts, however, e-participation initiatives are often launched to meet international benchmarks or external donor requirements, or to bolster public legitimacy in the face of dissatisfaction or international scrutiny (Ali & Bailur, 2007; Åström, Karlsson, Linde, & Pirannejad, 2012). These extrinsic drivers can result in superficial or tokenistic adoption, where platforms exist in form but remain disconnected from policymaking processes.

Although the empirical evidence is still limited, recent research points to the potential of e-participation to improve governance outcomes when adequately designed and supported. e-participation can improve governance outcomes such as responsiveness, accountability, and service delivery. In developing country literature however, the research focus is tipped towards supply-side e-participation studies. Ohemeng and Ofosu-Adarkwa (2015) emphasize this imbalance while examining Ghana's Open Data Initiative, and argue that supply-side technological initiatives alone are insufficient to generate meaningful participation outcomes without corresponding demand-side engagement and citizen inclusion mechanisms. Similarly, Okeke-Uzodike and Dlamini (2019), analyzing local municipal government in South Africa, show that low social capital between municipalities and citizens, weak feedback mechanisms, and limited institutional capacity to follow through on service delivery commitments constrained meaningful e-participation and contributed to citizen dissatisfaction and protests. Waheduzzaman and As-Saber (2015) suggest that participatory governance initiatives in Bangladesh have the potential to improve responsiveness, accountability, transparency, and predictability in local governance, although these outcomes were constrained by political and institutional barriers.

A unique feature in the developing country context is that unlike many advanced economies constrained by legacy administrative and technological systems, developing countries may have greater flexibility to adopt newer digital architectures and interoperable platforms. The rapid expansion of digital IDs, mobile money, and digital public infrastructure demonstrates how digitalization can enable institutional innovation and transform governance and service delivery outcomes even if foundational infrastructure may be limited or lacking (World Bank, 2016; Gelb & Metz, 2018).

Taken together, these findings highlight that developing countries provide an especially valuable setting for examining the factors shaping e-participation adoption and outcomes. Their combination of rapid digital transformation, institutional constraints, uneven access to technology, and evolving government-citizen power dynamics makes the interaction between supply and demand-side drivers particularly visible. These contexts allow researchers to better observe how the drivers interact to influence whether e-participation initiatives become meaningful mechanisms for citizen engagement or remain largely symbolic.

2.4. Conclusions

The review of the e-participation literature demonstrates that the field is multi-disciplinary, multi-faceted,conceptually diverse, and empirically fragmented. The evidence base is scattered, unbalanced, and methodologically uneven, with studies often limited to isolated cases, lacking longitudinal depth, privileging supply-side availability or demand-side willingness. Few studies bridge these perspectives to examine how government provision and citizen uptake interact in practice. Moreover, research is disproportionately concentrated in developed countries, leaving developing contexts underexplored despite their unique context, distinct institutional settings, socio-cultural dynamics, and rapid digital transformations.

This fragmentation constitutes a key weakness, resulting in gaps and inconsistencies in the empirical record. In particular, existing approaches fall short in explaining how supply and demand-side drivers interact, how this interaction is mediated within institutional settings, and how it translates into meaningful participation outcomes. Together, these limitations highlight the need for more integrative and relational approaches that capture the dynamic interplay between drivers, processes, and outcomes of e-participation.

The literature points to the importance of institutional mediation in shaping the interplay between supply and demand-side drivers, an aspect that remains insufficiently theorized in existing e-participation research. The effectiveness of e-participation systems therefore depends on the quality of this mediation, which is shaped by various factors discussed in the supply and demand-side literature. These mediating conditions ultimately determine whether interaction leads to meaningful outcomes in service delivery and policy influence, or remains procedural and limited in impact.

Against this backdrop, this study seeks to address the gaps in the literature by examining the interaction between supply and demand-side drivers within collaborative governance settings and their implications for participation outcomes. It is guided by the following research questions:

Research Questions:

RQ1: What are the key supply and demand-side drivers influencing e-participation?

RQ2: How does the interplay of e-participation drivers influence e-participation adoption?

RQ3: What drives meaningful e-participation outcomes in policy formulation and service delivery?

Chapter 3: Quantitative Analysis

*The objective of this chapter is to answer **RQ 1: What are the key supply and demand-side drivers influencing e-participation?** The chapter does so by operationalizing the theoretical framework described in the literature review chapter to explore the influence of supply and demand-side variables on e-participation adoption in the context of Europe. The analysis applies a multiple regression analysis and a longitudinal cluster analysis. The work explores the variations in e-participation use and its drivers across European countries. This longitudinal and multi-country analysis uses panel data from 20 European countries for the 2010–2022 period to address a recognized gap in the literature, namely the limited availability of longitudinal, comparative studies that jointly examine demand-side drivers (such as digital skills, trust, and cultural factors) and supply-side conditions (including e-government performance and governance) in shaping e-participation adoption over time. (Pérez-Morote et al., 2020)*

3.1 Theoretical E-participation Framework

This Chapter leverages quantitative methods to test a consolidated e-participation adoption framework building on the literature discussed in Chapter 2. The framework builds on concepts that are described in empirical studies as being associated with e-participation adoption, relying on TAM and UTAUT, institutional theory, and collaborative governance approaches. The consolidated e-participation adoption framework integrates both supply and demand-side concepts to answer **RQ 1: What are the key supply and demand-side drivers influencing e-participation?**

The framework attempts to explain patterns of e-participation adoption. Given the limitations of the available quantitative data, the analysis is not able to robustly assess whether adoption translates into meaningful participation outcomes. Consequently, the examination of outcomes and the conditions under which participation becomes meaningful is reserved for the qualitative analysis presented in the subsequent chapters.

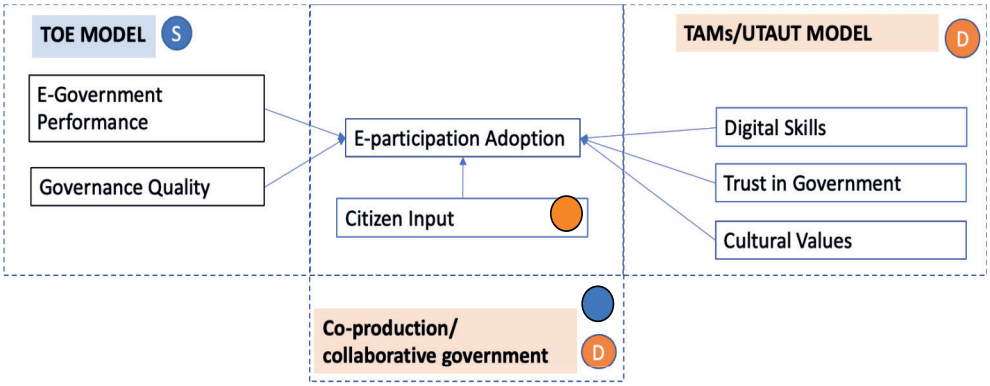
At the onset of this chapter, and as discussed in the literature review that comes before it, e-participation adoption in this dissertation is positioned within the overlap of e-government and e-democracy. This overlap is concerned with enhancing citizen engagement in policy-making and public service delivery through interaction, deliberation and co-creation (Welch, 2012; Macintosh, 2004; Saebo, Rose & Flak, 2008). And so this chapter focuses on digital participatory mechanisms in which the government plays a key role as a provider.

In this respect, in the e-participation framework discussed below, e-participation adoption is operationalised as the percentage of individuals who use the internet to interact with public authorities, including activities such as submitting forms, requesting information, or accessing

administrative services online (Eurostat).[4] However, it should be noted that this indicator does not capture the deepest forms of e-decision-making or co-creation.

The proposed theoretical framework comprises one dependent variable (e-participation adoption) and several independent variables (digital skills, citizen input, trust in government, cultural values, e-government performance, governance quality, and Gross Domestic Product (GDP) per capita, as a control socio-economic variables) as shown in Figure 3 below.

Figure 3: Theoretical e-Participation Framework



Source: Conceptual framework based on the TAMs, TOE and UTAUT models (adopted from Devis et al., 1986, Tornatzky and Fleischer, 1990 and Venkatesh et al., 2003) with a co-creation and collaborative government perspective.
Legend Key: DV-dependent variable, D-indicates demand-side variables, S- indicates supply-side variables

Digital Skills refer to the ability to access, understand, and effectively use digital technologies. They encompass both basic competencies, such as navigating websites or using email, and more advanced abilities like engaging with interactive platforms and evaluating online content (van Deursen & van Dijk, 2011). The literature consistently identifies digital skills as a critical enabler of e-participation, as individuals lacking such competencies are less likely to access or benefit from digital government services (Cruz-Jesus et al., 2012).

Citizen Input refers to the contributions, preferences, and feedback that individuals provide to the government through participatory mechanisms, both online and offline. In co-production theory (Bovaird, 2007; Meijer, 2012), citizen input is a core element, where citizens are viewed as active collaborators in the design, delivery, and evaluation of public services and e-participation platforms. High-quality input, characterized by relevance, representativeness, and deliberation quality, is more likely to inform policy and improve service delivery (Rowe & Frewer, 2005; Macintosh, 2004). In some contexts, citizen input often reflects broader civic engagement patterns,

[4] https://ec.europa.eu/eurostat/databrowser/view/ISOC_R_GOV_I/default/table?lang=en

where citizens that are active offline, including by voting or signing petitions are more likely to participate online (Dimitrova & Chen, 2006).

Citizen input is central to collaborative governance approaches and can be understood as both a supply and demand-side variable, as meaningful interaction between citizens and public institutions constitutes a core mechanism through which participation materializes. In this framework, however, citizen input is primarily conceptualized as a demand-side driver because it is operationalized through indicators associated with civic engagement and participatory behavior, such as voting, signing petitions, and other forms of citizen participation that reflect citizens' willingness and capacity to engage in public affairs.

Moreover, existing scholarship suggests that the effects of citizen input on institutional participation are conditional on contextual factors, particularly institutional trust and perceived legitimacy, such that participatory acts may function as either complementary or alternative modes of engagement depending on how responsive and trustworthy institutions are perceived to be (Tyler, 2006; van Deth, 2014; Nabatchi & Amsler, 2014).

Trust in Government, defined as the perception of the government's integrity and competence (Bélanger & Carter, 2008), is a critical factor in e-participation adoption. In digital governance, trust has expanded to encompass data privacy, platform security, and institutional reliability (Pérez-Morote et al., 2020). Studies have consistently shown that higher levels of trust in government and its agencies lead to increased acceptance and use of e-government services (Papadopoulou, Nikolaidou & Martakos, 2010). Other studies discuss the influence on e-participation adoption from the perspective of both trust in technology and trust in government. Nam (2014) argues that for e-government service use, trust in government may be more important than trust in technology, given the gap between a higher level of trust in technology and a lower level of trust in government (Sweeney, 2007). The assumption is that trust in government influences the adoption of e-participation by citizens.

Cultural Values (Liberal values) also shape citizens' predispositions toward e-government adoption, yet the literature on this is relatively limited. Drawing on insights from Inglehart & Christian Welze (2005), societies characterized by greater emphasis on individual autonomy, tolerance, and civic engagement tend to exhibit higher levels of institutional participation and openness to new forms of engagement, including digital channels. Furthermore, Kumar et al. (2020) investigates whether countries holding more liberal or progressive ideals vs those holding more conservative views are more prone to adopting e-government, finding that countries conforming to tradition and conservative ideals have shorter orientation and are less susceptible to change and the adoption of new technology. Other studies have explored "power distance" and individualism/collectivism drivers in shaping users' technology acceptance behaviors (Hofstede et al., 2010; Jan et al., 2024). In general, people from societies with high power distance tend to

accept and expect unequal distribution of power (Jan et al., 2024). In collectivist societies, adoption of technology tends to depend on group norms, peer influence and authoritative figures rather than individual attitudes. Individualistic contexts tend to foster autonomy in technology use, enhancing acceptance and innovation readiness (Hofstede et al., 2010). Some scholars emphasize that cultural readiness, rooted in openness, civic participation, and technology acceptance are factors influencing adoption (Panopoulou, Tambouris, & Tarabanis, 2014 and Steinbach et al, 2019).

E-government Performance relates to the availability, design, and functionality of digital platforms, underpinned by technological, institutional, and organizational arrangements (Al-Dalou & Abu-Shanab, 2013; Avdic et al., 2007). The availability of digital platforms alone does not guarantee participation (Zheng, 2015). According to the Technology Acceptance Model (TAM), perceived ease of use and perceived usefulness are key predictors of e-government update (Davis, 1986), making the evaluation of e-government performance central to actual uptake (Irani et al., 2012).

Governance Quality. Numerous studies point to the importance of institutional quality and credibility for the success of e-participation initiatives (Chadwick, 2006; Åström et al., 2012; Randma-Liiv, 2022). Political control, leadership and accountability towards citizens are key elements that make the diffusion of e-participation in public administrations a key success factor (Steinbach et al., 2019).

3.2 Methods

The methodological approach involves panel regression techniques and a hierarchical cluster analysis. The study utilizes a panel dataset covering the 2010–2022 period, which encompasses 162 regions across 20 European countries.

3.2.1 Database

The sample includes 20 European countries[5] disaggregated by their subnational regions based on Eurostat's Nomenclature of Territorial Units for Statistics (NUTS).[6] The sample comprises European Union (EU) member states, and European Free Trade Association (EFTA) states. The dataset integrates data from several secondary sources, including regional socio-economic and digital infrastructure indicators from Eurostat (the Community Survey on ICT Usage in Households and Individuals and European Regional Statistics), individual-level civic engagement, and trust measures from the European Social Survey (ESS), governance quality indicators from

[5] *AT BE BG CZ DE DK EE FI FR HR HU IE IT LT NL NO PT SE SK SI*

[6] *The Nomenclature of Territorial Units for Statistics (NUTS) is the European Union's official geocoding system for defining territorial divisions for statistical and analytical purposes. Established and maintained by Eurostat, the NUTS classification provides a harmonized, hierarchical framework that allows for consistent regional statistics, cross-country comparability, and regional policy analysis across EU member states (and associated countries in some datasets). The system has three levels, which differ in scale: NUTS1 refers to large territorial units that typically represent broad socio-economic regions with 92 regions; NUTS2 refers to medium-sized regions and has 244 regions; NUTS3 has the smallest disaggregation with 1,165 regions.*

the Quality of Government Institute (QoG), and e-government performance data from the UN E-Government Development Index (UN-EGDI).

To ensure comparability across countries and maximize regional coverage, all variables were harmonized at the subnational level, primarily at the NUTS2 level, with aggregation to the larger territorial unit NUTS1, where NUTS2 data were incomplete, reclassified, or unavailable. This was required to ensure the highest data coverage possible since for some countries data varied across NUTS levels and across sources. Furthermore the ESS and QoG survey datasets are biennial, whereas Eurostat data is annual. Eurostat data was biennialized to create the panel. This approach also preserved meaningful within-country variation while achieving adequate data coverage across countries and years. The final assembled panel includes 162 regions observed across 20 countries.

The variables were tested using panel data regression techniques in Stata. A detailed overview of variable definitions and data sources is provided in Table 2.

E-participation Adoption is the dependent variable in the analysis. It is defined as the percentage of *individuals who use the internet to interact with public authorities* in the last 12 months. Data for this indicator were available at the NUTS2 level from Eurostat from 2008 to 2024 expressed as percentages and did not require further manipulation. Interaction is expressed as either obtaining information from public authorities' websites, downloading official forms or submitting completed forms. The data is obtained from the EU survey on the use of ICT in households and by individuals commissioned by Eurostat on an annual basis in all EU member states, a set of associated European countries since 2010.[7] Eurostat revised the indicator in 2022, replacing series *I_IUGOV12* with *I_IUGOV1*. The updated measure broadened the concept of interaction to include mobile applications in addition to websites and expanded the range of covered digital interactions. Although this introduces a methodological break in strict comparability, the two series capture the same underlying concept of e-government interaction and were therefore merged to preserve longitudinal continuity in the analysis.

Given that the data for submitting completed forms is available as a separate sub-indicator (*I_IGOV12RT*) (albeit for a shorter time period 2008-2021), reflecting a greater transactional engagement level, this analysis considers both e-participation adoption variables.

Digital Skills (demand-side, explanatory variable) is measured as the percentage of individuals who used the internet to purchase goods or services online in the last 12 months. The data are sourced from Eurostat's Community Survey on ICT Usage in Households and by Individuals (CSIS) and are provided directly as percentages, requiring no further manipulation. This indicator illustrates individuals' purchasing behaviour and reflects readiness to engage in transactional

[7] *The transmission of microdata to Eurostat was voluntary until the reference year 2010 while it has been mandatory from 2011 onwards.*

online activities that signal citizens' comfort and confidence with performing transactional interactions online, conditions that are also relevant for engaging with digital government channels. In this respect the indicator serves as a proxy for citizens' overall ability to engage in e-participation, as online purchasing typically requires a baseline level of digital literacy, and familiarity with interactive online services.[8] The CSIS survey collects information on ICT access and usage at both the household and individual levels. While household-level data capture the availability of ICT infrastructure, the individual-level component provides detailed behavioural information, including the frequency, purpose, and complexity of internet use. Data for this indicator is available from 2010 until 2024.

Citizen Input (demand-side, explanatory variable) is operationalized using data from the European Social Survey (ESS). The ESS is an academically driven cross-national survey that has been conducted every two years across Europe since 2001. The survey measures the attitudes, beliefs, and behavior patterns of diverse populations in Europe and is available at the NUTS2 level. To measure the extent to which citizens engage with the government, I use the share of respondents who *signed a petition in the last 12 months (*ESS code for this variable is: *sgnptit)*. The citizen input variable is categorical with response options being yes/no in nature. It is based on a question that asks respondents whether they engaged in civic acts *"aiming to improve things in their country or help prevent things from going wrong*."

Trust in Government (demand-side, explanatory variable) – The ESS survey also collects information on perceptions about social and political trust. The indicator selected for inclusion in my model is *Trust in parliament (trstprl)* representing general trust in government. The ESS asks respondents to score their trust in the national parliament on a 0-10 scale, where 0 signifies no trust in the institution at all, and 10 means complete trust.

E-Government Performance (supply-side, explanatory variable). Data for this variable is not easily available at the sub-national level. I include the Government Online Services Index (OSI) from the UN E-Government Survey in my model. The OSI measures the readiness, sophistication, and countries' performance in online service maturity. More specifically the index captures the extent of (i) emerging information services; (ii) enhanced information services; (iii) transactional services; (iv) connected services, where more weight is given to more advanced tools and applications. Because OSI data is only available at the country level, NUTS 2 regions were assumed to be equal to their overall NUTS 0 reference.

To account for the impact of **governance quality (supply-side, explanatory variable)**, the paper draws on the Quality of Government Data, collected by the University of Gothenburg through a survey based on citizens' perceptions and experiences with governance in Europe.[9] The survey has

[8] https://ec.europa.eu/eurostat/web/regions/data/main-tables

[9] https://www.gu.se/en/quality-government/qog-data/data-downloads/european-quality-of-government-index

been commissioned in five rounds, 2010, 2013, 2017, 2021 and 2024, and is available at the NUTS2 and NUTS1 level. The data serves as the basis for the construction of a European Quality of Government Index (EQI) focused on public sector corruption, along with the extent to which citizens believe various public sector services are impartially allocated and of good quality in the EU. The construction of EQI Index also leverages the World Governance Indicators (specifically control of corruption, government effectiveness, rule of law and voice and accountability), which are combined with the survey data and standardized for the EU sample to result in three pillars – corruption, impartiality, and quality. The EQI pillars are standardized so that the mean is "0" with a standard deviation of "1". To align the EQI with the time series panel and to maximize temporal coverage, the survey years were harmonized and values for intervening years were interpolated using standard linear interpolation techniques.

Cultural values variable **(demand-side, explanatory variable)** is based on attitudes towards the LGBT+ community from the ESS survey. The ESS code for this variable is *freehms*. The survey captures respondents' agreement with the statement "Gays and lesbians are free to live life as they wish." In the ESS, responses are originally recorded on a five-point Likert scale ranging from *strongly agree* to *strongly disagree*. For the purposes of this study, the scale was reversed so that higher values indicate more liberal and tolerant attitudes toward gay and lesbian freedom. This recording ensures that the direction of the variable is consistent with the conceptual interpretation of cultural openness and progressive social values, so that higher values indicate more liberal attitudes toward gay and lesbian freedom. Missing observations and refusals in the answers were excluded. A post-stratification weight has been applied (Weighting ESS Data, 2014).

Control variables. I include one socio-economic variable *GDP per capita (Euro/per inhabitant)* at the NUTS 2 level from Eurostat's regional databases. Pérez-Morote et al. (2020) argue that countries with higher per capita incomes are more likely to have broader e-government and e-participation user-base as well as citizens who are more effectively engaged with government (Zheng and Schachter, 2017; Geana and Greiner, 2011; Friemel, 2014).

The final harmonized panel covers the ESS survey years **2010, 2012, 2014, 2016, 2018, 2020, and 2022**, which represent the only years in which all core variables from Eurostat, the ESS, the UN OSI index, and the QoG dataset can be aligned at the NUTS2 level. These years were retained because ESS indicators are biennial and the QoG data required interpolation to match this schedule, ensuring maximum comparability across all measures in the analysis.

In terms of data processing, the ESS datasets are available at the microlevel or individual respondents' level on a biennial basis. A number of data treatments were required to calculate regional values for the three ESS indicators. The citizen input variable is binary with response options being yes/no in nature. The trust and liberal values are measured on Likert-type scales. Both variables were averaged by region, excluding refusals, 'don't know,' and non-answers, and

subsequently rescaled to the unit interval (0–1) using min–max normalization to enhance comparability across regions and survey years. A post-stratification weight has also been applied (Weighting ESS Data, 2020).

Table 2: Variable description and sources

Variable	Definition	Perspective	Source
Concept: e-Participation Adoption			
E-participation adoption, incl, both general and submitting official forms	(i) Percentage of individuals who used the internet to interact with public authorities (%) - more general (ii) submitting official forms (%) - as a subindicator	Demand-side	Eurostat/CSIS Survey (https://ec.europa.eu/eurostat/databrowser/view/isoc_r_gov_i__custom_19269624/default/table)
Concept: Digital Skills			
Internet Use	Percentage of individuals who used the internet to purchase goods or services online in the last 12 months (%)	Demand-side	Eurostat/CSIS Survey https://ec.europa.eu/eurostat/databrowser/view/isoc_r_blt12_i__custom_19318328/default/table
Concept: Citizen Input			
Petitions	Percentage of individuals who signed petition in the last 12 months (%)	Demand-side	European Social Survey https://www.europeansocialsurvey.org/data-portal
Concept: Trust in Government			
Trust in government	Individuals' Trust in the parliament, rescaled to the unit interval (0-1) (higher score greater trust)	Demand-side	European Social Survey https://www.europeansocialsurvey.org/data-portal
Concept: E-Government Performance			
E-Government Performance	Government Online Services Index (OSI); expressed as z-scores (the higher the better)	Supply-side	UN EGov Development Index https://publicadministration.un.org/egovkb/en-us/About/Overview/-E-Government-Development-Index
Concept: Governance Quality			
Governance quality	European Quality of Government Index (EQI) (corruption, impartiality, and quality), expressed as a z-scores (the higher the better)	Supply-side	Quality of Government Index/ University of Gothenburg https://www.gu.se/en/quality-government/qog-data/data-downloads/european-

			quality-of-government-index
Concept: Cultural Values			
Liberal values	Attitudes towards LGBQT, rescaled to the unit interval (0-1) (higher = more liberal values)	Demand-side	European Social Survey https://www.europeansocialsurvey.org/data-portal
Control Variables			
GDP/capita	GDP per capita (Euro/ inhabitant, current prices)	Control variable	Eurostat Regional Statistics https://ec.europa.eu/eurostat/databrowser/view/tec00001/default/table?lang=en

3.2.2 Model

The hypotheses are tested using a multilevel mixed-effects panel regression model, which is appropriate for this cross-country regional panel because the data are hierarchically structured, with regions *i* nested within countries *j*. The model accounts for this structure by including country-level random intercepts, which capture unobserved country-specific heterogeneity.

$$E_Participation_{ijt} = \beta_0 + \beta_1 Internet_Use_{ijt} + \beta_2 Liberal_Values_{ijt} + \beta_3 Trust_in_Gov_{ijt} + \beta_4 Petitions_{ijt} + \beta_5 Governance_EQI_{ijt} + \beta_6 E_Gov_Perf_OSI_{ijt} + \beta_7 GDP_{ijt} + \beta_8 (Trust_in_Gov \times Petitions)_{ijt} + \mu_j + \varepsilon_{ijt}$$

Where $E_Participation_{ijt}$ is the e-participation adoption for region *i* in country *j* at time *t*; β_0 is the intercept; β_1 to β_8 are the coefficients for the independent variables (Internet Use, Liberal Values, Trust in Government, Petitions, Governance (EQI), E-government Performance (OSI), and GDP per capita); μ_j is the country-level random intercept (unobserved country-specific effects); and ε_{ijt} is the idiosyncratic error term. The model also included an interaction term, β_8 $(Trust_in_Gov \times Petitions)_{ijt}$, tested in Model 5.

To assess the robustness of the findings, random-effects panel models were also estimated and are reported alongside the mixed-effects models in Table 5. Both approaches are appropriate because the study is primarily concerned with explaining differences in e-participation adoption across countries. These models retain between-country variation and allow the estimation of country-level and slowly changing predictors. By contrast, fixed-effects models rely exclusively on within-unit variation over time and would absorb much of the between-country variation that is central to the theoretical framework and research questions.

Further, to classify countries according to their level of e-participation adoption, I applied hierarchical cluster analysis using Ward's method on the standardized measure of e-participation

adoption. This approach follows established practice in e-government and e-participation research, where clustering is used to identify adoption patterns or maturity groups (Holzer & Kim, 2005; Pina et al., 2010; Medaglia, 2012; De Juana-Espinosa et al., 2019).

Clustering the main dependent variable following Pérez-Morote et al. 2020, enables the identification of performance-based groups (high, medium, and low e-participation adoption). This approach is particularly suitable for analyzing change over time, as countries may move between clusters across years. After identifying performance clusters, I profile each cluster using the independent variables to assess the structural characteristics associated with different adoption levels.

3.3 Results

3.3.1 Regression Results

Based on the descriptive statistics in Table 3, the primary dependent variable, *e-participation adoption*, shows a mean of 55.8%. In addition, the sub-indicator reflecting deeper engagement (*submission of official forms*) demonstrates a lower mean of 37.2%. Regions within Bulgaria, Croatia and Italy feature some of the lowest adoption levels. Denmark, Finland and Norway have the highest adoption rates, with some regions exceeding 93% of online participation. The independent variable *Internet use* has a mean value of 55.4%. Bulgaria and Italy have among the lowest internet user bases, while Denmark the highest. The mean share of individuals who signed petitions is 23.4%. Finland exhibits the highest levels of Trust in government, while Bulgaria and Italy the lowest. The highest-ranking country on the OSI index is Finland, while the lowest is Hungary and Czechia. Bulgaria and Hungary, uphold the most conservative values within the sample, while Denmark and Sweden the most liberal. According to the data, Bulgaria, Hungary and Italy have the worst quality of governance, while Finland and Denmark have the best.

Table 3: Descriptive statistics

Variable	mean	sd	min	max
E-participation Adoption (% of citizens)	55.8	18.2	10.9	93.7
(incl. submitting official forms (% of citizens))	37.2	20	3.73	86.5
Internet Use (% of citizens)	55.4	21.9	1.12	95.7
Liberal Values ('Gays/Lesbians should be free to live life as they wish' (0=disagree, 1=agree)	.76	.13	.22	1
EQI: European Quality of Government Index (z-scale, the higher the better)	.24	.90	-2.6	2.8
OSI: Online Services Index (UN EGDI) (0=lowest to 1=highest performance)	.77	.15	.35	1
Petitions (% of citizens)	23.4	17.4	0	81.5
Trust in Government (rescaled 0=no trust, 1=high trust)	.44	.11	.09	.74
GDP per Capita (EUR, regional)	28,527	15,673	3,100	113,300

Table 4 shows the correlation matrix between the independent and control variables. The analysis of multicollinearity performed on the independent variables using a variance inflation factors (VIF) test determined that there is no multicollinearity threat.

Table 4: Correlations Among Dependent, Independent, and Control Variables

Variable	E-participation adoption	(incl. submitting official forms)	Internet Use	Liberal Values	Trust in Government	Petitions	Governance Quality (EQI)	E-Gov Performance (OSI)	GDP per Cap
E-participation adoption	1.00								
(incl. submitting official forms)	0.84	1.00							
Internet Use	0.80	0.69	1.00						
Liberal Values	0.51	0.51	0.53	1.00					
Trust in Government	0.72	0.55	0.68	0.45	1.00				
Petitions	0.36	0.19	0.34	0.48	0.36	1.00			
Governance Quality (EQI)	0.70	0.53	0.70	0.67	0.72	0.49	1.00		
E-Gov. Performance (OSI)	0.48	0.54	0.48	0.46	0.30	0.29	0.39	1.00	
GDP per Capita	0.56	0.51	0.65	0.58	0.61	0.42	0.65	0.35	1.00

Table 5 below presents the results from the mixed-effects and random-effects regression models estimating the determinants of **e-participation adoption** across European regions and countries. Both the main dependent variable *e-participation adoption* and the *submitting official forms* sub-indicator are estimated in the table. Across all specifications, *internet use* emerged as the strongest and most consistent predictor of e-participation uptake ($p < 0.0001$), confirming that citizens' capability to navigate the digital environment is a central driver.

Liberal values also display a robust positive association with e-participation, although this relationship is concentrated in the models examining the submission of official forms, where the coefficients are positive and statistically significant ($p < 0.05$). This suggests that socio-cultural

orientations toward openness and self-expression are particularly relevant for more transactional forms of digital government engagement.

Trust in government is positive and statistically significant for broader e-participation (Models 1 and 2), but not for the submission of official forms (Models 3, 4 and 5). This finding suggests that trust facilitates voluntary interaction with public authorities but is less important for transactional interactions, where practical necessity and digital capability may play a larger role.

Petitions exhibit a dual role across the two forms of engagement examined. Its coefficient is positive and statistically significant in the models for broader e-participation (Models 1 and 2), suggesting that petition signing complements general digital interaction with public authorities. Conversely, petition signing is negative and statistically significant in the models for submitting official forms (Models 3 and 4), indicating that it may function as an alternative form of engagement rather than reinforcing transactional e-government use. Although the interaction term between Trust in Government and Petition Signing is not statistically significant ($p = 0.610$), providing no evidence that trust moderates this relationship, the main effects and predictive margins reveal a substantively meaningful pattern. Petition signing consistently complements broader interaction with public authorities while substituting for more administrative forms of engagement.

Supply-side variables produce more mixed results. **Governance Quality (EQI)** is positive and highly significant in the Random Effects model for broader e-participation (Model 1), but becomes negative and statistically significant in the Mixed Effects models for submitting official forms (Models 4 and 5). The inconsistent sign and significance of EQI across specifications suggests that the relationship between governance quality and e-participation adoption is more complex than initially hypothesized. **E-government Performance (OSI)** remains statistically insignificant across all specifications. **GDP per capita** is positive and highly significant in the models analyzing transactional engagement (submitting official forms) ($p < 0.01$), indicating that economic development is strongly associated with the adoption of transactional e-government use.

Table 5: Regression Analyses for Broader E-Participation Adoption

Variables	(1) E-participation adoption (Random Effects)	(2) E-participation adoption (Mixed Effects)	(3) (incl. submitting official forms) (Random Effects)	(4) (incl. submitting official forms) (Mixed Effects)	(5) (incl. submitting official forms) + interaction term (Mixed Effects)
Internet Use	0.482*** (0.066)	0.432*** (0.063)	0.543*** (0.109)	0.580*** (0.087)	0.583*** (0.088)
Liberal Values	7.857 (10.714)	5.114 (9.330)	31.735*** (11.733)	22.322** (9.625)	22.403** (9.523)
Trust in Government	18.873*** (7.127)	9.782** (4.788)	-7.173 (11.246)	-5.703 (12.372)	-10.225 (12.388)

Petitions	0.059* (0.033)	0.080** (0.038)	-0.105*** (0.036)	-0.084** (0.033)	-0.175 (0.157)
Trust in Gov x Petitions	—	—	—	—	0.210 (0.410)
Governance Quality (EQI)	5.620*** (1.687)	1.086 (1.028)	-0.911 (2.354)	-2.442** (1.152)	-2.394** (1.148)
E-Government Performance (OSI)	3.464 (5.506)	1.450 (6.685)	0.954 (6.565)	-2.221 (8.194)	-2.273 (8.250)
GDP per Capita	-0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Constant	13.821* (7.257)	17.794*** (6.826)	-23.893** (9.955)	-8.588 (9.061)	-6.784 (10.119)
Observations	764	764	738	738	738
Number of Region IDs	162		162		
Number of Groups (Country)		20		20	20
R-sq: within	0.4467		0.6055		
R-sq: between	0.7978		0.5387		
R-sq: overall	0.6929		0.4919		

Robust standard errors in parentheses
***p < 0.01, **p < 0.05, p* < 0.10

The continuous interaction between trust in government and petitions is not statistically significant in the mixed-effects model for submitting official forms ($p = 0.610$). This indicates that the hypothesized moderating role of institutional trust in the relationship between petition signing and e-participation is not supported. Nevertheless, predictive margins indicate that, for broader e-participation adoption, the relationship between petition signing and engagement remains positive across low, average, and high levels of institutional trust. By contrast, the negative relationship between petition signing and transactional engagement through the submission of official forms persists across the full range of trust levels. Taken together, these findings point to a dual role for petition signing: it complements broader interaction with public authorities while substituting for more administrative and transactional forms of digital engagement.

Figure 4 (a): Interaction Effects E-Participation adoption (Broader E-participation adoption)

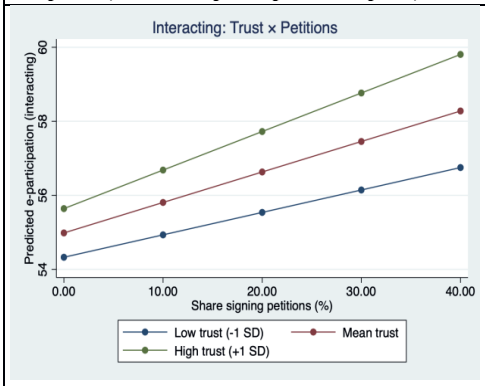
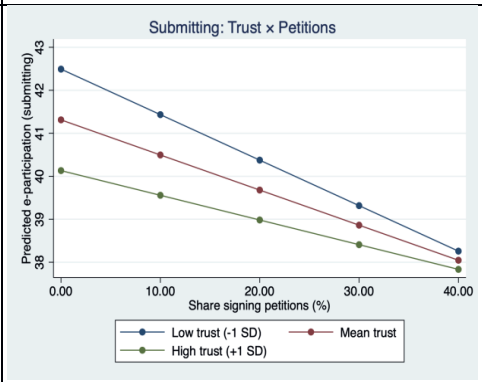


Figure 4 (b): Interaction Effects Submitting Official Forms



3.3.2 Cluster Analysis Results

To complement the panel regression and further address the research questions, a cluster analysis was conducted to examine how country groupings formed and changed over the period under observation. This longitudinal approach utilizes hierarchical clustering with Ward's linkage, an analysis of variance method that evaluates and minimizes the distances within clusters.

Following the methodology established by Pérez-Morote et al. (2020), this analysis groups countries based on the primary dependent variable: e-participation adoption, which serves as a proxy for the broader level of e-government engagement. Based on a dendrogram analysis, three clusters were identified as the optimal number to represent the data. These groupings categorize the sample into Cluster 1, representing the lowest-performing nations; Cluster 2, for medium-level performers; and Cluster 3, which includes the top-performing countries.

The cluster analysis allows to investigate the composition and evolution of country groupings over time. The analysis leverages the hierarchical cluster method using Ward's linkage which leverages an analysis of variance approach to evaluate the distances between clusters. The methodology follows Pérez-Morote et al. (2020) where the cluster analysis allows countries to be grouped together based on the dependent variable, which in this case is *e-participation adoption*. The grouping variable used here is the broader level of e-government adoption. The number of clusters was determined based on a dendrogram analysis, identifying three clusters as the optimum number. Cluster 1 comprises the lowest performing countries, Cluster 2 the medium performers and Cluster 3 features the high performers of the panel for the respective year. The countries included in the three clusters at the beginning and at the end of the period are shown in Table 6 below.

Table 6: Cluster Analysis

Cluster 1 (Low Performers)		Cluster 2 (Medium Performers)		Cluster 3 (High Performers)	
2012	2022	2012	2022	2012	2022
BG	BG	AT	AT	DK	DK
CZ	IT	EE	BE	NO	NO
HR	HR	FI	CZ	SE	SE
IT	DE	FR	FR		NL
LT		NL	HU		FI
PT		BE	IE		EE
HU		DE	LT		
SK		SI	PT		
		IE	SI		
			SK		

Between 2012 and 2022, the cluster structure shows both continuity and some notable mobility across European countries. Cluster 3, composed mostly of Nordic countries (Denmark, Norway and Sweden), is among the most stable groups, with all three of its members remaining in the lead over time, reflecting similarities in institutional capacity, digital maturity and citizen engagement. Structural traits within the e-government ecosystems of Bulgaria, Croatia, and Italy appear to have persisted between 2012 and 2022. These countries remained part of Cluster 1 throughout the decade, which suggests a lack of significant advancement despite the broader European shifts towards digitalization. This cluster was also joined by Germany which moved from the medium performing Cluster 2 to low performing Cluster 1, a key exception for an economic powerhouse. Cluster 2 (medium performers) grew in size, with a core of countries that remained in the group (Austria, Belgium, France, Ireland, and Slovenia) and an influx of countries that showed substantial upward mobility from Cluster 1 since 2012, specifically Czechia, Hungary, Lithuania, Portugal, and Slovakia. The movement from Cluster 1 to 2 suggests improvements in digital engagement or institutional performance relative to the baseline. Likewise, several countries originally in Cluster 2 (Estonia, Finland and the Netherlands) transitioned upward into Cluster 3, reflecting accelerated performance and alignment with high-performing Nordic systems.

The consistency of Nordic countries within the high-performing cluster is in line with literature linking high citizen-centered e-government, strong civic and participatory culture, institutional trust, advanced digital literacy to more sustained forms of digital participation (van Dijk, 2006; United Nations, 2022). By contrast, Germany's downward movement may reflect structural challenges associated with fragmented federal digital governance, institutional conservatism, and the persistence of legacy administrative systems that have slowed public-sector digital transformation relative to other European countries (OECD, 2023; European Commission, 2022).

At the same time, the upward mobility observed among several Eastern European countries and Portugal may reflect broader processes of institutional modernization and digital convergence within the European Union. Countries such as Czechia, Hungary, Lithuania, Slovakia moved from the lower-performing to the medium-performing cluster over the period, while Estonia and Finland advanced into the highest-performing group. These transitions may be associated with sustained investments in digital infrastructure, EU-supported administrative reforms, diffusion of digital governance practices, and broader efforts to modernize public administration systems. In several cases, later adopters may also have benefited from "catch-up" dynamics, enabling them to implement newer digital governance systems without some of the institutional and technological constraints associated with older legacy systems.

Overall, the cluster transitions highlight both a consolidation of high-performance, medium and low-performance systems and some notable upward mobility among several Eastern European countries, while Germany is the only country in the sample to slide down to Cluster 1.

A comparison of cluster averages of several key variables over the period reveals additional insight into the evolution of e-participation adoption across Europe (See Table 7 below). A detailed cluster comparison presenting the evolution of key variables across clusters for each year is presented in Annex I.

Table 7: Cluster Averages: Change in Key Variables (2010-2022)

Variable	Cluster 1 (Low Performers)	Cluster 2 (Medium Performers)	Cluster 3 (High Performers)
E-participation adoption (Change in % points [Rel. % change])	+0.4 [1.4%]	+4.9 [8.5%]	+8.5 [10.9%]
incl. Submitting Official Forms (Change in % points [Rel. % change], 2010→2020)	+8.3 [57.9%]	+3.0 [9.3%]	+16.1 [29.6%]
Internet Use (e-commerce change in % points [Rel. % change])	+34.7 [168.6%]	+18.8 [37.6%]	+14.6 [21.1%]
Liberal Values (Absolute change in score [Rel. % change])	+0.06 [9.5%]	0.00 [0.0%]	+0.06 [7.4%]
Petitions (Change in % points [Rel. % change])	+1.86 [13.8%]	–5.53 [-22.6%]	–6.22 [-19.8%]

Variable	Cluster 1 (Low Performers)	Cluster 2 (Medium Performers)	Cluster 3 (High Performers)
Trust in Government (Absolute change in score [Rel. % change])	+0.06 [18.8%]	–0.04 [-8.5%]	+0.02 [3.4%]
E-Government Performance (OSI) (Absolute change in score [Rel. % change])	+0.33 [71.7%]	+0.26 [48.1%]	+0.20 [28.6%]
Governance Quality (EQI) (Absolute Δ SD units)	+0.23 SD	–0.68 SD	–0.16 SD
GDP per capita (Absolute change in EUR [Rel. % change])	+EUR15,873 [114.2%]	+EUR8,403 [31.2%]	+EUR7,660 [18.5%]

Overall, the comparison across clusters shows that growth in broader e-participation adoption was largest in the high-performing cluster (+8.5 percentage points), followed by the medium-performing cluster (+4.9 percentage points), and weakest in the low-performing cluster (+0.4 percentage points). Growth in submitting official forms followed a different pattern, with the high-performing cluster again recording the largest increase (+16.1 percentage points), followed by the low-performing cluster (+8.3 percentage points) and the medium-performing cluster (+3.0 percentage points).

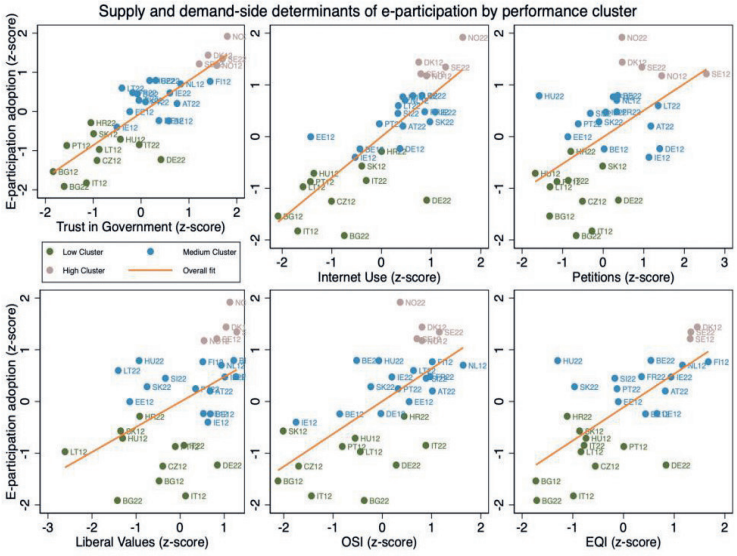
Interestingly, these findings complement but also nuance the regression results. While Internet Use emerged as the strongest predictor of e-participation adoption in the regression models, the cluster analysis demonstrates that improvements in digital capability alone do not automatically translate into higher levels of participation. The low-performing cluster experienced by far the largest increase in Internet Use (+34.7 percentage points; 168.6% relative growth), yet broader e-participation adoption increased by only 0.4 percentage points. This suggests that digital readiness, while necessary, is not sufficient to generate sustained growth in participation. Additional institutional, behavioural, and contextual factors appear to influence whether increased digital capacity is translated into meaningful engagement with government.

The cluster analysis further reinforces the limited explanatory power of supply-side indicators alone. Although low-performing countries experienced substantial improvements in E-Government Performance (OSI), these gains were not accompanied by comparable increases in broader e-participation adoption. This finding is consistent with the regression results, where OSI remained statistically insignificant across all specifications. Together, these results suggest that the provision of digital government services, while important, does not automatically generate citizen uptake. Furthermore, the findings highlight potential limitations of OSI and similar macro-level indicators, which primarily measure the availability of online services but may not fully capture

their uptake or the broader institutional capacities, interoperability, administrative coordination, required to deliver effective and user-centered digital government. The following section explores these issues in greater detail.

The structural and developmental changes across the three clusters are further elaborated in **Figure 5**, which illustrates the evolution of key variables and their association with e-participation adoption by cluster.

Figure 5: Evolution of key variables and their association with e-participation adoption by cluster



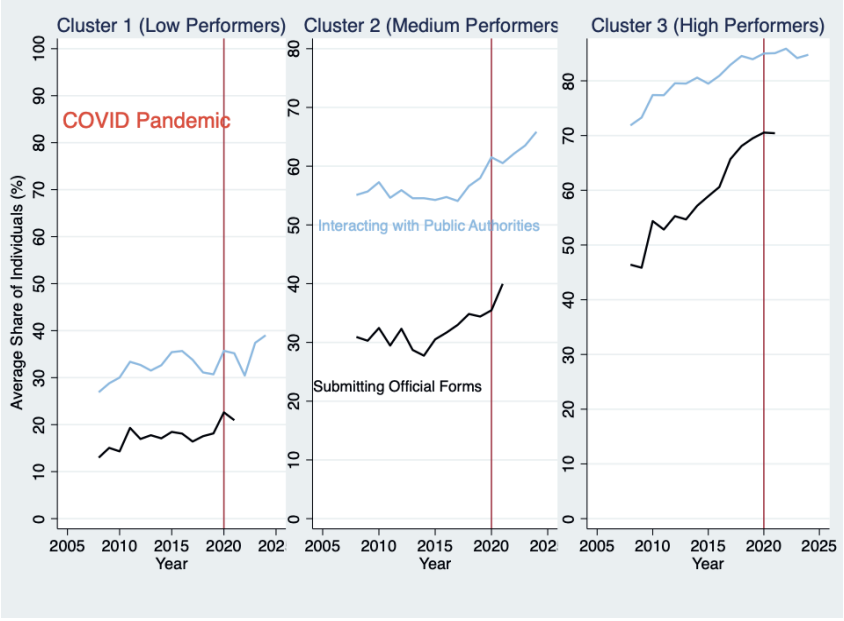
Effects of the Covid-19 Pandemic as a test for E-Government Performance

The COVID-19 pandemic provides a useful opportunity to examine the resilience and responsiveness of e-government systems under conditions of increased demand for digital interaction. Focusing specifically on 2020, the data reveal a nuanced pattern of change across clusters (Figure 6 below). While both broader e-participation adoption and more transactional engagement through the submission of official forms increased across all clusters in 2020, these trends were not sustained uniformly over time. Adoption rates rose sharply between 2019 and 2020, reflecting the immediate effects of the pandemic and the increased necessity for digital interaction with public authorities. However, the medium-performing cluster experienced the most sustained and rapid growth in adoption, whereas the low-performing cluster, despite recording an initial increase, did not maintain this momentum in subsequent years.

These patterns suggest that the pandemic did not generate a universal or lasting surge in e-government use; rather, it reinforced existing structural differences across countries and clusters.

The findings further indicate that supply-side conditions such as fragmented digital systems, limited administrative capacity, and weak interoperability across public institutions may have also shaped the ability of e-government ecosystems to respond effectively during the Pandemic. These findings also expose issues related to supply-side indicators measuring e-performance, which may not fully capture the institutional readiness, interoperability and coordination capacity required to carry out fully digital processes. In this sense, the pandemic served as a stress test of institutional digital readiness. In this context, low-performing countries would need to continue addressing both supply and demand-side barriers in order to sustain growth in e-participation adoption and strengthen the institutional and technological capacities required to effectively absorb and capitalize on surges in digital use, such as those observed during the COVID-19 period.

Figure 6: Trends of e-participation adoption



Source: Author calculations based on Eurostat data

3.4 Discussion

The research contributes to existing academic literature by investigating the impacts of supply and demand-side drivers on e-participation adoption in Europe.

In summary, to address **RQ 1: What are the key supply and demand-side drivers influencing e-participation?,** the findings demonstrate that demand-side factors are the primary and most

robust drivers of e-participation adoption. Specifically, Internet Use (as a proxy for digital skills, operationalized as *e-commerce use*) emerged as the strongest predictor. Liberal Values were positively associated with transactional engagement through the *submission of official forms*, while Trust in Government was significant only for the broader *e-participation adoption* variable. On the other hand, supply-side variables yielded mixed results. Governance Quality (EQI) exhibited inconsistent effects across model specifications, while E-Government Performance (OSI) remained statistically insignificant throughout. Taken together, these findings suggest that variation in e-participation adoption across European regions is explained more effectively by citizens' capabilities, values, and engagement behaviours than by the availability or maturity of government-provided digital infrastructure.

These findings align with the hierarchical model specification, which revealed that the majority of variance in e-participation adoption is explained by cross-country differences rather than within-country regional variation, emphasizing that national context is the principal determinant of adoption rates.

Across all model specifications, Internet Use operationalized as e-commerce use emerged as the most robust and consistently positive predictor of e-participation adoption. Higher levels of e-commerce transaction use are strongly associated with both general interaction with public authorities (broader e-participation adoption) and more transactional interaction through the *submission of official forms*. This finding corroborates prior work emphasizing the foundational role of user efficacy and digital skills in enabling e-participation.

This study also indicates that Liberal Values are positive and statistically significant predictors of *submitting official forms* but not the broader *e-participation adoption* variable. This suggests that cultural and normative factors matter primarily when citizens move from broad interaction with public officials toward transactional engagement. Countries where citizens hold more liberal attitudes, characterized by openness to diversity, tolerance and support for individual rights, exhibit systematically higher levels of engagement with digital participation tools. This study corroborates the literature that finds that in more liberal contexts, citizens may be more willing to experiment with new digital channels, perceive participation as legitimate and worthwhile, and view engagement with government as an extension of civic responsibility rather than a risk.

The role of Trust in Government is more nuanced than initially hypothesised. Trust is positive and significant for broader *e-participation adoption*, indicating that citizens who trust public institutions are more likely to interact with public authorities online. However, trust becomes statistically insignificant for the *submission of official forms*. This suggests that voluntary engagement with government is influenced by institutional confidence, whereas transactional use of digital services is driven more by capability, convenience, and necessity.

When it comes to the role of petitions, contrary to initial expectations, the interaction between institutional trust and petition signing is not statistically significant in either model for either broader e-participation or the submission of official forms. This suggests that the analysis could not support that the relationship between petitions and digital engagement depends on levels of institutional trust in the way initially hypothesised. Nevertheless, the main effects and predictive margins reveal a consistent and substantively meaningful pattern that differs across forms of engagement. Petition signing is positively associated with broader e-participation adoption, indicating that expressive civic action and general digital engagement tend to reinforce one another. By contrast, petition signing is negatively associated with the submission of official forms, suggesting that petition activity may act as a substitute or alternative channel for citizens who do not engage in more transactional interactions with the government online. Taken together, these findings point to a dual role for petition signing: it appears to complement broader, informational interaction with public authorities while substituting for more transactional engagement with digital government services.

Supply-side drivers (E-Government Performance and Governance Quality) appeared to show mixed results on their influence on e-participation usage. E-Government Performance (OSI) remains statistically insignificant across all specifications. Governance Quality (EQI) shows a strong positive effect in the Random Effects model (Model 1), but becomes negative and significant in the Mixed Effects models for submitting forms (Model 4 and Model 5). This suggests its predictive power is higher at the country-level than at the regional level, where socio-demographic and behavioural factors dominate. Furthermore, GDP per capita is highly significant in the models analyzing transactional engagement (submitting official forms), indicating that economic development is strongly associated with the adoption of transactional e-government use.

This study did not strongly support the hypothesis that e-participation performance and good governance as it pertains to freedom of corruption and impartiality of institutions has positive influence on e-participation usage. However, the COVID-19 findings suggest that this relationship may not hold uniformly across clusters. In lower-adoption countries, temporary increases in digital interaction during the pandemic did not translate into sustained growth in e-government use, suggesting that supply-side constraints, including fragmented administrative systems, limited institutional capacity, and weak interoperability across public institutions, may hinder adoption even when demand for e-participation increases.

The study also shows that E-Government Performance, specifically online service readiness as measured by the UN's OSI, does not necessarily translate into greater e-participation adoption. The availability of e-participation tools and digital applications alone is not sufficient to attract or sustain users. Instead, adoption appears to be shaped by both supply and demand-side barriers that extend beyond the existence of digital platforms themselves. On the supply side, administrative capacity constraints, fragmented and bureaucratic systems, and limited interoperability may reduce governments' ability to deliver seamless and fully digital services. On the demand-side, factors

such as institutional trust, and privacy concerns, digital skills, and familiarity with online interactions also influence citizens' willingness to engage digitally.

This pattern is particularly visible in low-performing countries such as Bulgaria and Italy, where internet use has grown rapidly since 2010, signalling growing digital readiness. Citizen input and individual participation, reflected in activities such as signing petitions for civic causes, have likewise increased across this cluster. The analysis further reinforces these findings, showing that the low performers also marked the largest increase in internet use, indicating substantial digital catch-up. Yet, e-participation adoption rates did not increase proportionately, despite the temporary rise observed during the COVID-19 period.

These findings both align with and extend the existing literature on e-participation adoption. Research has emphasized the role of supply-side factors, specifically platform availability, e-government maturity, as primary drivers of digital participation (Macintosh, 2004; Medaglia, 2012). A growing body of work has highlighted the importance of demand-side conditions, including digital skills, trust, and civic engagement (Norris, 2001; van Dijk, 2019). The results of this study strongly support this latter perspective, demonstrating that citizen readiness and socio-cultural factors are more decisive in explaining variation in e-participation adoption than the mere presence of digital infrastructure. In particular, the central role of Internet use corroborates literature on the second-level digital divide, which emphasizes skills and usage over access (van Dijk, 2019), while the findings associated with liberal values resonates with research on political culture and self-expression values as drivers of participation (Inglehart & Welzel, 2005).

At the same time, the limited explanatory power of supply-side indicators challenges the implicit assumption in much of the e-government literature that improvements in online service provision will automatically translate into higher levels of citizen engagement (Bekkers & Homburg, 2007). Instead, the findings are consistent with more recent work in digital governance and ICT4D, which argues that technology acts as an enabling condition, but not a sufficient driver of participation, and that outcomes depend on how digital tools interact with trust, capabilities, and broader socio-political context (Peixoto & Fox, 2016; Gigler & Bailur, 2014). This study contributes to the literature by empirically demonstrating, in a longitudinal European context, that demand-side factors are not secondary but foundational to understanding e-participation adoption.

More detailed case studies are needed to understand the causal relationship between supply-side and demand-side variables and e-participation adoption. At the intersection of the two perspectives lies a successful and sustainable co-creation policy process, which, to a large extent, depends on well-informed and well-educated citizens. The role of citizen engagement in government decision-making is the cornerstone of any democracy (Galston, 2001; Pateman, 1970). That is, a further analysis of e participation determinants from the supply and demand-side in countries where the readiness and quality of e-services doesn't match the use of those services could provide important clues about the interplay of factors affecting e-participation adoption. Specific emphasis should be

placed on better understanding how citizen input is collected and incorporated in the design of e-services and government decision making processes.

3.5 Limitations

Some limitations should be underlined, particularly related to the lack of data capturing all three dimensions of e-participation, beyond e-information, e-consultation to also include e-decision-making. Importantly, the e-participation indicator does not allow for distinguishing between voluntary and non-voluntary use, as some interactions may occur because digital channels are the only available means of accessing certain public services (Pérez-Morote et al., 2020). Further limitations relate to the measurement of supply-side conditions. The Online Services Index (OSI), used as a proxy for E-Government Performance, is available only at the national level and therefore cannot capture regional variation in digital government provision. Moreover, while OSI provides a useful measure of the availability and sophistication of online services, it does not directly assess citizen uptake, institutional responsiveness, interoperability or administrative coordinations. Similarly, the lack of regional data on trust in the internet or technology prevented the inclusion of such variables.

Chapter 4: Methodology Case Studies

This chapter outlines the study's qualitative research design, drawing on an exploratory multiple-case study methodology set within an extreme case setting to examine the interplay of supply and demand-side drivers that shape e-participation. Rwanda was purposefully selected as an extreme case (Patton, 2015), as it exhibits particularly pronounced characteristics of the phenomenon under investigation. On the one hand Rwanda occupies a top position on the United Nations E-Participation Index among African countries, yet demand-side barriers and other factors hinder adoption. Two e-participation initiatives were studied to assess their effectiveness in citizen engagement and government responsiveness. Each case is examined independently to gain deeper contextual understanding of how e-participation is conceptualized, designed, and implemented within its specific setting. The data were collected through document search, semi-structured interviews and site visits. Interviews were conducted with a diverse group of stakeholders, including government officials, NGO representatives, and citizens. Site visits in Rwanda enriched the case studies by providing essential context and capturing the practical application of e-participation initiatives. To analyze the data, a thematic analysis was employed, utilizing both deductive and inductive coding approaches, ensuring a comprehensive exploration of e-participation dynamics by drawing on the literature review, theoretical framework, and the primary data.

4.1 Country Selection

Drawing on the theoretical framework established in the preceding chapter, and to further interrogate the interplay between supply and demand-side drivers that shape e-participation outcomes, this study examines two distinct e-participation initiatives in Rwanda.

This chapter utilizes an extreme case methodology, a purposeful sampling strategy that focuses on information-rich cases characterized by unusual or pronounced attributes relative to the phenomenon under investigation (Patton, 2015). Such cases serve to amplify underlying mechanisms, making the relationships between variables more discernible and interpretable. Rather than pursuing statistical representativeness, this methodological choice seeks to generate deeper theoretical insights by examining contexts where core research themes are especially prominent.

Rwanda was purposefully selected for this study due to its complex and, in many respects, extreme e-governance landscape, which provides a rich terrain for e-participation research. Rwanda exemplifies an extreme case because of its contradictory digital environment and participatory governance: strong supply-side readiness, evidenced by its high ranking on the United Nations E-Participation Index in Africa, coexists with significantly weaker demand-side conditions, as

reflected in its low internet user base (measured by Telecommunications Infrastructure Index) and digital skills. These contrasting dynamics position Rwanda as an extreme case, offering a particularly rich context for examining the institutional dynamics and structural constraints that shape e-participation adoption.

Furthermore, Rwanda is a post-conflict country in which the state has prioritized national unity and has formally pledged to promote participatory practices as part of its governance agenda. However, many participatory practices are state-led and citizen uptake and meaningful engagement are limited, reflecting inclusive governance challenges.

Similarly, digital transformation has been a top priority for Rwanda in recent years. The country has leveraged digital technologies to modernize the public sector, positioning digital government as a central pillar of its development strategy. As a result, Rwanda consistently ranks among the top performers in Africa on the United Nations E-Participation Index and the Online Service Index (see Figures 7 (a) and 7 (b) below), both of which are components of the United Nations E-Government Survey. The Survey's principal outcome is the E-Government Development Index (EGDI), which assesses e-government readiness across three dimensions: the Online Services Index (OSI), the Telecommunications Infrastructure Index (TII), and the Human Capital Index (HCI). The E-Participation Index (EPI) is derived as a supplementary index to the EGDI.

Taken together, the EPI and OSI capture the supply-side readiness of government, measuring the availability, sophistication, and participatory features of online public services and government portals. In contrast, the TII, measured through indicators such as internet use and mobile broadband subscriptions, and the HCI reflect demand-side conditions, capturing the population's access to digital infrastructure and the human capabilities, including education and skills, required to effectively use and engage with digital government services.

Figure 7(a): E-Participation and Human Capital Index

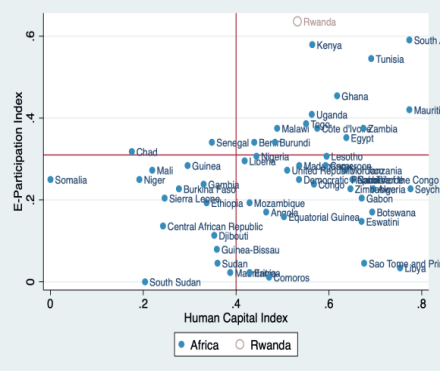
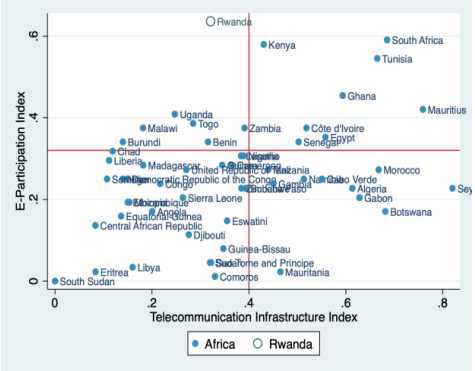


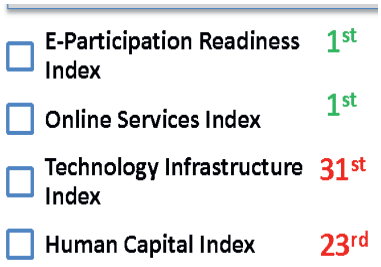
Figure 7(b): E-Participation and Telecommunication Infrastructure Index



Source: United Nations E-Government Survey, EGDI 2022

On the supply-side perspective captured by the E-Participation Index and Online Services Index, Rwanda ranks among the top performers in Africa. However, on the demand-side perspective, Rwanda performs comparatively lower, as reflected in the TII and HCI, which signal persistent constraints in access and capabilities (See Figure 8). This combination of strong supply-side performance alongside weaker demand-side conditions makes Rwanda a particularly relevant case for exploring the dynamics and limitations of e-participation adoption in a developing-country context.

Figure 8: Rwanda's Performance among African countries on the UN E-Government Survey (Rank)



Source: EGDI 2022

Rwanda's rank on the TII index (which covers demand-side factors such as internet use and mobile broadband subscriptions) reflects a large technology usage gap. Despite the country's near-universal mobile broadband coverage, a significant gap persists between infrastructure availability and actual internet use. By 2024, close to 100 percent of the population was covered by at least a 3G mobile-cellular signal, with 4G coverage approaching nationwide reach, placing Rwanda among the leading African countries in terms of telecommunications infrastructure.[10] However, this impressive coverage has not translated into equivalent levels of usage. Estimates for 2023 suggest that only around 34 percent of individuals use the internet, indicating that active uptake lags well behind the theoretical access footprint.[11] This disparity reflects a broader "usage gap" observed across Least Developed Countries, where high costs of mobile data and internet-enabled devices, particularly smartphones, continue to constrain adoption.

4.2 Case Study Selection

To better understand these tensions, the study focuses on two distinct initiatives, selected through purposeful sampling to represent different types of e-participation: the Citizens' Guide to the Budget, which centers on participatory planning and budget transparency, and Irembo.Gov, a platform for digital service delivery.

Case selection is guided by several analytical criteria. First, the cases exhibit clear variation in **supply-side capacity**, with one initiative characterized by relatively limited digital sophistication and reliance on mediated forms of engagement (the Citizens' Guide to the Budget), and the other by a highly developed, centralized digital platform (Irembo.Gov). Second, the cases differ in their

[10] https://datahub.itu.int/data/?e=RWA
[11] https://datahub.itu.int/data/?e=RWA

participatory modality, ranging from information provision during traditional community gatherings (Citizens' Guide to Budget) to digital platform-based interactions embedded in routine service delivery (Irembo). Third, the cases vary in their **institutional configuration**, involving the delivery model, coordination between different lead ministries, implementing agencies, and the role of intermediary actors, allowing for an examination of how institutional arrangements shape participation processes. Finally, both initiatives operate at the national level and are embedded in formal government processes, making them suitable for exploring the interaction between government-led design choices and demand-side conditions at scale.

By examining a strong and a weak supply-side initiative within the same country context, the study strives to open the institutional "black box" of e-participation and enable a deeper exploration of how government design choices interact with citizens' capacities, preferences, and perceptions to shape participation outcomes. The case analysis therefore focuses on: (i) the interaction between supply-side and demand-side factors underpinning meaningful engagement and outcomes; and (ii) the practices through which government institutions seek to collect, process, and respond to citizen input.

Based on the identified criteria, the study reviews the following cases:

- **The Citizens' Guide to the Budget** is a summarized and simplified e-booklet which is meant to elaborate how the government mobilizes and allocates resources among the national priorities agreed during the planning and budgeting process. According to the Ministry of Finance and Economic Planning (MINECOFIN) the key objective of the booklet is to *"increase citizens' understanding of the national planning and budgeting process and promote their participation in both the planning and implementation of the selected priorities with feedback through established monitoring and evaluation mechanisms."*[12] The process originated with MINECOFIN in response to Rwanda's low-rank on the Open Budget Survey.[13] The e-booklet is prepared and published annually with the involvement of civil society organizations, which play an important role in collecting citizen feedback, disseminating the guide and providing capacity building. The leading civil society organization, CLADHO coordinates efforts with the Local Administrative Entities Development Agency (LODA) under the Ministry of Local Development (MINALOC).
- **Irembo.Gov** is the flagship initiative of Rwanda's digital transformation journey, which was launched in 2015 as the first integrated, cross-sectoral e-government platform. Developed as a public-private partnership between the Government of Rwanda and Rwanda Online Platform Limited, Irembo.Gov is designed to streamline access to public services and reduce bureaucratic inefficiencies. The platform works in coordination with the Rwanda Information Society Agency (RISA) under the Ministry of Information

[12] *Citizens Urged to Actively Participate in Planning and Budgeting Processes*

[13] *https://internationalbudget.org/*

Technology and Communications (MITEC), with active involvement from local government and key service-providing ministries such as the Ministry of Local Government (MINALOC).

4.3 Case Study Methodology

This study adopts an exploratory multiple-case study methodology to address the following research questions:

RQ2: How does the interplay of e-participation drivers influence e-participation adoption?

RQ3: What drives meaningful e-participation outcomes in policy formulation and service delivery?

An exploratory case study design is employed to enable a process of discovery across multiple events, actors, and institutional settings (Stebbins, 2001). This approach is particularly well suited to examining complex and context-dependent phenomena, such as e-participation, where the relationships between institutional design, citizen behavior, and participation outcomes are not fully understood. Following Yin's (2009) guidance on case study research, case study protocols were developed for each selected initiative to ensure analytical rigor and consistency across cases.

Each case is examined independently to gain a deeper contextual understanding of how e-participation is conceptualized, designed, and implemented within its specific setting. The purpose is not to conduct a direct comparison between the cases, but rather to understand the diversity of experiences and institutional dynamics that shape digital participation in practice, with a specific focus on the interaction of the supply and demand-side perspective and meaningful outcomes. Following Yin's (2009) logic of replication, the cases are treated as individual units of analysis, enabling analytical insights that may contribute to broader theoretical understanding, without assuming uniformity across contexts.

In line with Yin (2009), the case study protocol includes: (a) an introduction to the case study and the purpose of the protocol; (b) data collection procedures; (c) an outline of the case study report; (d) case study questions; and (e) evaluation criteria. This structured approach supports an iterative research process, allowing the researcher to return to earlier theoretical propositions and refine them in light of empirical insights generated during data collection. As emphasized by Denzin and Lincoln (1998), case study reporting is an integral component of qualitative inquiry and is treated as equally important as the collection and interpretation of empirical material.

The cases are not sampled to reflect representativeness of a larger population and there is no aim to generalize based on the outcomes of the cases. The cases are specific illustrative examples of e-participation initiatives, that represent extreme cases based on variation in e-participation demand

and supply, as explained in the prior section. This variation of different e-participation types was chosen to make theoretical inferences based on the case analysis.

4.3.1 Data Collection

Data collection combined in-depth review of documents and institutional materials relevant to each e-participation initiative and semi-structured interviews with key stakeholders. Together, these sources provided a comprehensive understanding of the policy context, institutional design, and implementation practices shaping government-led e-participation in Rwanda.

The data collection process began with the identification and review of official records, policy frameworks, reports, and publicly available materials produced by government institutions, civil society organizations, and international development partners. These materials were identified through targeted searches of government portals, institutional websites associated with each initiative, and repositories of international organizations such as the World Bank and the International Telecommunication Union. Search terms included "Irembo," "Citizens' Guide to the Budget," and "Rwanda," alongside broader terms related to digital governance and participation. Academic databases at Maastricht University were also consulted to identify relevant peer-reviewed literature, policy research, and media coverage that informed the analytical framing of the cases. The search period covered 2010-2024.

The reviewed materials span a range of institutional outputs, including national development strategies, sectoral ICT policies, decentralization frameworks, evaluation reports, and initiative-specific publications, as well as research studies and communication materials produced by civil society organizations and development partners. Drawing on established typologies in qualitative research (Ary et al., 2014; Okeke-Uzodike & Dlamini, 2019), these materials were organized into three broad groups: (i) official public records that articulate government priorities, strategies, and policy commitments; (ii) research-oriented outputs that provide analytical and evaluative perspectives on governance and digital transformation; and (iii) publicizing materials aimed at dissemination, capacity building, or public communication. This classification was used as an organizing device rather than as an analytical end in itself, ensuring comprehensive coverage of the institutional and policy environments surrounding each case.

Engagement with these materials served multiple purposes: it informed the development of interview guides, supported the reconstruction of institutional processes and timelines, and enabled triangulation of interview insights against formal policy announcements and implementation narratives. An overview of the materials consulted for each case is provided in Table 8, illustrating the breadth of sources used to contextualize and interpret the e-participation initiatives examined in the study.

Table 8: Reviewed Documents by category

Document Category	Publishing Organization
Official Public Record	
Rwanda Vision 2050	MINECOFIN
National Strategy for Transformation 2017-2024 (NST1)	MINECOFIN
National Information Communication Infrastructure (NICI) Policy I,II,III	MINICT
Smart Rwanda 2020 Master Plan	MINICT
ICT for Governance Cluster Strategy (2020-2024)	RISA
Rwanda's ICT Sector Strategic Plan (2018-2024)	MINICT
Citizen Report Card, 2022	RGB
Citizen Report Card, 2023	RGB
Imihigo 2021/2022: Evaluation Executive Report	NISR
Fiscal and Financial Decentralization Policy, 2013	MINECOFIN
National Decentralization Policy 2007, and Economic Development and Poverty Reduction Strategy (EDPRS 1 & 2) 2008, 2013	MINALOC
National Local Economic and Community Development Policy, 2019	MINALOC
Research-oriented Documents	
Report: Future Drivers of Growth in Rwanda: Innovation, Integration, Agglomeration, and Competition, 2020	World Bank
Report: Switching on Smart Rwanda: Digital inclusion, collaboration and a G5 mindset, 2021	ITU
Project Information Document: Rwanda Advancing Citizen Engagement Project, 2021	World Bank
Report: Governing with and for Citizens - Lesson from a Post-Genocide Rwanda, 2016.	Never Again Rwanda
Report: A Compendium of Stories of Change for the PPIMA project, 2022	Norwegian People's Aid
Report Digital divides or dividends? Assessing the inclusiveness of basic services in Rwanda's digitalization agenda, 2022	INCLUDE, Knowledge Platform
Report: Rwanda Civil Society Development Barometer, 2018	Rwanda Civil Society Platform
Report: Interpeace. Citizen participation research report, 2019	Interpeace
Research Article: Bakunzibake et al,: "E-government implementation and monitoring: The case of Rwanda's 'one-stop' E-government" 2019	Wiley Online
Research Article: Hasselskog M.: Rwandan "home grown initiatives": Illustrating inherent contradictions of the democratic developmental state. Dev Policy Rev. 2018	Wiley Online
Publicizing Materials	
Newspaper Article: Irembo launches new drive to revolutionize the way citizens access govt services, 2022	Newtimes Rwanda
Newspaper Article: Car free day Irembo spurs digital literacy sustainability, 2023	Newtimes Rwanda
Promoting Youth Leadership in Democratic GovernanceTraining Manual, 2017	National Endowment for Democracy & Never Again Rwanda
Citizens' guide to the budget 2022/23 and 2023/24	MINECOFIN, CLADHO, UNICEF
National Umushyikirano Council (2016): A Decade of Delivering Democracy and Development to Rwandans. 2003 - 2014	RGB
Irembo.Gov website	Irembo

4.3.1.1 Interview sampling strategy

The second step in the primary data collection process involved conducting semi-structured interviews with various stakeholders directly engaged in the initiatives. The informants were identified using purposive sampling techniques which targeted key stakeholders within the supply and demand-side perspective involved in the process lifecycle of each initiative. The stakeholders included central and local government officials, non-governmental organizations and civil society organizations, service delivery managers, and diverse user groups. A list of the key stakeholders within each initiative is presented in **Annex II**, as well as in Chapter 5 under each case study. The semi-structured format allowed for flexibility in the questions, enabling the exploration of new aspects that arose during the interviews. This adaptable approach ensured that the interviews captured a wide range of perspectives and experiences.

4.3.1.2 Design of the instrument

The data collection instrument consisted of semi-structured interview guides tailored to address the specific perspectives of different stakeholder groups. These guides were developed to ensure comprehensive exploration of the two main perspectives: supply-side (government, service providers and intermediaries) and demand-side (users and citizens). Supply-side questions examined the mechanisms for designing and delivering e-participation initiatives, strategies for citizen engagement, measures to ensure transparency and representation as well as utilization of citizen input and feedback. Demand-side questions investigated citizens' awareness of these initiatives, their sense of inclusion in the process, and their perceptions of the transparency and effectiveness of the outcomes. Detailed questionnaires are presented in **Annex III**.

4.3.1.3 Interview data collection

During the interview process which took place from April 2023 until April 2024, 21 individuals were interviewed both in person and online. Interviews were conducted with government officials, service providers, non-governmental organizations, civil society organizations, international organizations operating in Rwanda and users to gather qualitative data on supply and demand-side aspects of e-participation initiatives.

The interview protocols, including a consent form and letter of information for research participants alongside data collection and data treatment plans were developed and based on a predetermined research framework and ethical guidelines which were granted ethical approval by the Members of the Maastricht University Ethics committee in March 2023. The interview process was designed with sufficient adaptability, allowing the questions to be tailored based on the interviewee's role in the e-participation processes and the insights they provided. This approach enabled a deeper exploration of specific topics that were considered essential to the study.

Interview participants were identified through a stakeholder mapping exercise informed by the review of institutional materials related to each e-participation initiative. This process targeted key actors involved in the design, implementation, and mediation of the initiatives, including government officials and civil society representatives. Contact details were obtained from institutional websites and public materials, complemented by targeted web searches and snowball referrals from earlier interviewees. Potential participants were contacted by email, with one to two follow-up messages sent in cases of non-response. When invitees declined or were unavailable, alternative participants occupying similar institutional roles were approached.

Each interview lasted approximately one hour. All interviews were conducted in English and audio-recorded with participants' consent. Detailed notes were taken during the interviews, and full transcripts were produced shortly thereafter to preserve the accuracy and richness of the data.

Table 9: List of interviews including the function, organization and gender of interviewees

Title	Organization	Country	Case Study	ID
Director	LODA	Rwanda	Citizens' Guide to the Budget	LODA
Officer	UNICEF	Rwanda	Citizens' Guide to the budget	UNICEF
Programme Policy and Strategy Adviser	Norwegian People's Aid	Rwanda	Citizens' Guide to the Budget	Norwegian People's Aid
Program Manager	AJPRODHO	Rwanda	Citizens' Guide to the budget	AJPRODHO 1
Programme Officer	AJPRODHO	Rwanda	Citizens' Guide to the budget	AJPRODHO 2
Programs Manager&Child Rights Focal Person	CLADHO	Rwanda	Citizens' Guide to the Budget	CLADHO 1
Programs Officer	CLADHO	Rwanda	Citizens' Guide to the Budget	CLADHO 2
Program Manager	Never Again Rwanda	Rwanda	Citizens' Guide to the Budget	NAR CSO 1
Deputy Executive Director in charge of Strategic Partnerships & Advocacy	Never Again Rwanda	Rwanda	Citizens' Guide to the Budget	NAR CSO 2
Citizen Participant	Youth Civic Engagement Volunteer (AJPRODHO)	Rwanda	Citizens' Guide to the Budget	User 1
Citizen Participant	NGO Founder	Rwanda	Citizens' Guide to the Budget	User 2
Director of Planning, M&E Unit	Rwanda Information Society Authority/Ministry of ICT	Rwanda	Irembo	RISA

Title	Organization	Country	Case Study	ID
Governance Specialist	Rwanda Governance Board	Rwanda	Irembo	RGB
Former Minister of Youth and ICT of Rwanda	Africa CDC	Rwanda	Irembo	Min ICT
Director of Customer Experience & Service Distribution	Irembo.gov	Rwanda	Irembo	Irembo 1
Agents' network Agent	Irembo.gov	Rwanda	Irembo	Irembo 2
Director Partnerships	Irembo.gov	Rwanda	Irembo	Irembo 3
Irembo user	Ngoma district/Kazo sector/Birenga Cell	Rwanda	Irembo	User 1
Irembo user	Ngoma district/Kazo sector/Birenga Cell	Rwanda	Irembo	User 2
Irembo user	Kigali	Rwanda	Irembo	User 3
Irembo user	Kigali	Rwanda	Irembo	User 4

4.3.1.4 Site visits

As part of the empirical work, data was also collected during a visit to Rwanda which included discussions with stakeholders participating in the Citizens' Guide to the Budget, a site visit to Irembo's headquarters in Kigali, and a series of site visits to agent kiosks (for the Irembo case study) in the Kigali area between 26-29 March, 2024. These site visits provided contextual insights into the interactions between citizens and service providers. During the site visits, it was observed how users engaged with the services, the physical setup of the kiosks, and any challenges encountered by both kiosk operators and citizens. The site visits allowed for a better contextual understanding of how digital services were integrated into everyday life, capturing environmental and behavioral factors that may not have been apparent through remote data collection methods.

4.3.2 Data Analysis

Thematic analysis was employed to analyze the primary data using Atlas.ti. The coding used both deductive and inductive approaches. In line with academic standards, the analysis started deductively with a set of themes and sub-themes related to e-participation, derived from the literature review and theoretical framework. It then relied on inductive coding techniques typically used in grounded theory, outlined by Bryman (2008) to enrich the codebook with new themes and findings emerging from the documents' review and interviews (Cordella and Paletti, 2019; Yuan & Gasco-Hernandez 2021; Trochim, 1989).

The main deductive dimensions "supply" and "demand" aligned with the two primary e-participation perspectives, while a third dimension, "meaningful outcomes," was added to address the research gaps in understanding the effects of e-participation initiatives on policy making and

service delivery (Fung, 2015). The literature distinguishes between instrumental outcomes (efficiency, accessibility gains, cost reduction etc.) and transformative outcomes (empowerment, institutionalized citizen voice etc.) (Macintosh, 2004; Medaglia, 2012; Sæbø, Rose & Flak, 2008). Within the supply-side dimension, the themes include e-government performance, governance quality, and, on the demand-side, they encompass willingness to use, trust in government, citizen input, cultural values, and digital skills.

The deductive codebook was used to code in software Atlas.ti and guided the analysis of the documents and interview transcripts (Braun & Clarke, 2006). This process ensured that the analysis is grounded in both existing contextual knowledge and new data, allowing for a more robust interpretation of themes. As a result, the codebooks were further enriched by the inductively identified new codes which emerged from documents and interview transcripts. This dynamic approach, as described by Bingham and Witkowsky (2022) and Charmaz (2014), allowed for flexibility in the analysis, providing a nuanced understanding of how e-participation initiatives perform in practice. The coding process combined theoretical insights with emergent sub-themes, ensuring that the findings reflect both the predefined research objectives and the emergent experiences of research participants.

Inter-coder reliability was addressed through regular discussions with the supervisory team, during which coding decisions and emerging themes were reviewed and refined to reach shared agreement. To minimize researcher bias during interpretation and theme development, reflexive strategies such as analytic memoing and peer debriefing were employed, with the supervisory team providing critical oversight and feedback throughout the analysis process to ensure interpretations remained grounded in the data.

An initial table containing the deductive dimensions and themes derived from the literature, is provided in Table 10, while the specific codebooks for each e-participation case with inductive sub-themes derived from the documents and interview transcripts are included in the findings section of the case studies chapter.

Table 10: Deductive codebook

Dimension	Theme
Supply-side	E-Government Performance, Governance Quality
Demand-side	Willingness to Use, Trust in Government, Citizen Input, Cultural Values, Digital Skills
Meaningful Outcomes	Instrumental Outcomes, Transformative Outcomes

Chapter 5: Case Studies Rwanda

This chapter employs a multiple-case study methodology to explore the phenomenon of e-participation in Rwanda through two cases: the Citizens' Guide to the Budget and Irembo.Gov. Rwanda exemplifies an extreme case because of its contradictory digital environment: strong supply-side e-government readiness, contrasted with weak demand conditions, within hierarchical governance traditions. The chapter discusses the methods and case studies' findings, focusing on RQ2 and RQ3. RQ2: How does the interplay of e-participation drivers influence e-participation adoption? RQ3: What drives meaningful e-participation outcomes in policy formulation and service delivery? The approach leverages inductive coding methods to identify emerging themes and codes that supplement the deductive codebook derived from theory and discussed in the earlier chapters. The analysis from the case studies indicates that e-participation in Rwanda remains in its formative stages, characterized primarily by government-driven initiatives that often position citizens more as recipients rather than active contributors.

Rwanda's development trajectory presents a complex and multifaceted picture, shaped by post-conflict recovery and state-led modernization. The nation has made commendable development progress, especially in its reconstruction efforts following the genocide against the Tutsi in 1994. Yet the country faces lingering challenges related to meaningful participation and inclusive development. This duality defines Rwanda's current state, reflecting both its achievements and the challenges it faces in its ongoing development journey.

Rwanda's post-conflict recovery has focused on rebuilding national unity, citizen engagement, and accountability, as outlined in Rwanda's Vision 2050. These efforts are pursued through the country's decentralization reforms and participatory practices called Home Grown Solutions (HGS).[14] HGS are traditional participatory practices, protected by the constitution which often date to pre-colonial times. They aim to redistribute power and enhance participatory governance and equitable service delivery at the local level. Aligned with this vision, Rwanda has prioritized digital transformation through a series of National Plans (ICT Sector Strategic Plan, Smart Rwanda Master Plan etc.), positioning digital technologies as a tool to empower civic engagement efforts.

These efforts have helped establish Rwanda as a digital transformation leader in Africa. The country ranks among the continent's top performers on both the E-Participation Index (EPI) and Online Services Index (OSI), which are components of the United Nations E-Government Survey, reflecting its strong commitment to digital transformation as a tool for development.

However, challenges related to meaningful citizen participation, inclusive development, human capacity and internet usage gaps persist, highlighting the complexity of Rwanda's development

[14] https://www.rgb.rw/1/home-grown-solutions

landscape. These dynamics are explored through two e-participation initiatives: the Citizens' Guide to the Budget and Irembo.Gov.

5.1 Case Study One: The Citizens' Guide to the Budget

The Citizens' Guide to the Budget is a summarized and simplified e-booklet which is meant to elaborate how the government mobilizes and allocates resources towards the national priorities agreed during the planning and budgeting process. According to the Ministry of Finance and Economic Planning (MINECOFIN) the key objective of the booklet is to *"increase citizens' understanding of the national planning and budgeting process and promote their participation in both the planning and implementation of the selected priorities with feedback through established monitoring and evaluation mechanisms."*[15]

The process originated with MINECOFIN in fiscal year 2009/2010 in response to Rwanda's low-ranking on the Open Budget Survey.[16] Since then the e-booklet has been prepared and published annually in 3 languages Kinyarwanda, English and French. Civil society plays an important role in collecting citizen feedback, disseminating the guide and providing capacity building. The leading civil society organization, CLADHO coordinates efforts with the Local Administrative Entities Development Agency (LODA) under the Ministry of Local Development (MINALOC).

5.1.1 Main stakeholders

There are a number of stakeholders involved in the preparation and dissemination of the booklet. Summary tables of the main stakeholders and their roles for each case studies are presented in Annex III.

The **Ministry of Finance and Economic Planning (MINECOFIN)** prepares the booklet, and works with civil society to collect and integrate feedback from citizens as well as present the booklet at community convenings.

The key organization in charge of supporting and dissemining the booklet is **CLADHO** - an Umbrella Human Rights Organization founded in 1993 with the mission of defending, protecting, and promoting human rights and social justice in Rwanda. CLADHO is composed of 20 member organizations and funded by the Norwegian People's Aid, European Union through Action Aid Rwanda budget transparency and accountability program. CLADHO started working on the Citizens Budget in 2008 at the request of the government, specifically MINECOFIN *"after receiving a low score of 8 on the Open Budget Survey*" (CLADHO 2023).

Another key government stakeholder is **the Ministry of Local Government (MINALOC),** through the **Local Administrative Entities Development Agency (LODA),** which works with

[15] *Citizens Urged to Actively Participate in Planning and Budgeting Processes*
[16] *https://internationalbudget.org/open-budget-survey/*

CLADHO during the citizen consultation process at the local level. LODA maintains a database for citizens input Monitoring & Evaluation Information System (MEIS) at the District level, which is intended as a repository of citizen priorities considered for inclusion in the budget.

Norwegians People's Aid provides funding and capacity building for local CSOs. It promotes the use of the Community Score Card (CSC) model that engages both citizens, service providers and government in a constructive dialogue on community issues. The CSC is a grassroots instrument that has been adopted by the local government in specific districts to facilitate citizen participation in the preparation process of development plans, budgets and performance contracts (Imihigo) at the district level. The organization has also introduced the voluntary Governance Focal Point (GFP) program which supports the scale-up of the CSC and engages with local communities at the grass-roots level. The GFPs have become important intermediaries for the facilitation of input collection for the citizen budget guide.

UNICEF's engagement in the Citizens' Guide to the Budget is structured around financial support as well as child and youth engagement. For the past several years UNICEF has provided ongoing financial assistance to MINECOFIN for the development, printing, and dissemination of the guide. In partnership with CLADHO, UNICEF empowers and trains children and youth representatives to meaningfully participate in the planning and budgeting process**.** UNICEF also collaborates with CLADHO to decentralize the budget booklet, bringing it from the national level down to the district level by creating district-specific budgets, an initiative that began in 2021.

Never Again Rwanda is a Rwandan peacebuilding and social justice NGO, established in 2002, in response to the 1994 Genocide against the Tutsi. Their goal is to empower citizens of diverse backgrounds with opportunities to become active citizens for a peaceful society. NAR plays an important role in the Citizen Budget Guide process by leading civil consultations with local leaders and citizens. This involves using participatory approaches throughout the entire budgeting and planning lifecycle, providing capacity building for both local leaders and citizens to enhance their understanding of the budgeting process and foster the establishment of effective two-way engagement channels. NAR also documents citizen input and helps institutions improve their citizen consultation processes.

The Youth Association for Human Rights Promotion and Development (AJPRODHO) is a non-profit, membership organization working to improve the situation of youth, children and women in Rwanda through human rights promotion, protection, research, and advocacy, economic empowerment, and civil society strengthening. AJPRODHO plays a key role in amplifying youth voices in the budgeting process by mobilizing the Governance Focal Points (GFP) volunteer program. The GFP volunteers: i) collect issues at the cell level and escalate them to district authorities; ii) facilitate cell-level meetings ensuring at least 25% youth participation, in

collaboration with local leaders; iii) undertake Community Score Card (CSC) initiatives to monitor local service delivery and governance outcomes.

5.1.2 Process Cycle

The Citizens' Guide to the Budget follows Rwanda's fiscal budget cycle and is intended to promote transparency and citizen engagement in the process. This cycle covers several key steps, starting with capacity building and moving through priority identification, budget preparation, dissemination, and monitoring.

The first step in the process begins with capacity building, which takes place throughout the year, and intensifies before the budget cycle starts. The objective is to equip citizens and local leaders with the necessary knowledge and skills to engage effectively in the budgeting process. Civil society organizations such as CLADHO, NAR, and AJPRODHO lead efforts to conduct workshops, trainings, and community meetings. These activities are intended to help citizens understand how the budget and its financial allocations work, as well as their role as citizens in contributing to national priorities. Specific programs also target marginalized groups, such as youth, to build foundational skills in critical thinking and decision-making, ensuring broader participation and empowerment.

The next phase, identification of national priorities, takes place from August to December and involves gathering citizen inputs for the upcoming budget. CLADHO organizes pre-budget hearings to collect feedback from local leaders, citizens, and youth representatives. The input is documented by CLADHO with the support of LODA which oversees the process of gathering priorities at the local level through the MEIS database. This begins with village assemblies, including Home-Grown Solutions (HGS), where citizens identify key priorities, which are then consolidated at the cell and district levels. Once collected, these inputs are submitted to MINECOFIN, Parliament, and other government agencies to inform budget planning and decision-making.

Home Grown Solutions (HGS) are traditional participatory practices, protected by the constitution which often date to pre-colonial times. They are important in understanding Rwanda's approach to participation and they play a key role in this case study. One example is Umuganda - a mandatory monthly community work initiative where citizens gather to perform public service such as cleaning the streets or building schools. Umuganga also serves as a platform for citizens to discuss program progress and address local challenges. Another HGS, Imihigo, involves performance contracts in which local leaders and citizens commit to delivering specific targets aligned with the approved budget. These mechanisms aim to promote transparency and enable citizens to hold leaders accountable in fulfilling their commitments.

The budget preparation and submission phase occurs from April to June. During this period, CLADHO works closely with MINECOFIN, Parliament, and CSOs to integrate citizen priorities into the national budget. Consultations with parliamentarians are organized to advocate for these priorities, while analysis is conducted through specific lenses, such as gender and youth. Youth committees and children's representatives also participate in discussions, presenting their perspectives to Parliament and ensuring inclusivity in the budget preparation process. This phase concludes with the submission of the finalized budget to Parliament for approval.

Following budget approval, the dissemination of the booklet takes place from June to July. CLADHO, supported by partners such as UNICEF, leads efforts to distribute the approved Citizens' Guide to the Budget across administrative levels, ensuring citizens are informed about budget decisions and the extent to which their inputs were incorporated. Dissemination leverages HGS and other convening such as community meetings at the district, sector, and village levels, where feedback is provided on key budget outcomes. The guide is distributed both in print and digitally to improve accessibility, although challenges persist due to low digital literacy and limited internet access in some areas.

Finally, to ensure that budget priorities are implemented as planned, citizens engage in community efforts, often leveraging mandatory HGS such as Umuganda and Imihigo.

5.1.3 Case Analysis

As discussed in the Methodology chapter (Chapter 4), the study applies a thematic analysis approach combining deductive and inductive coding. The deductive coding framework was informed by the literature and focused on key supply-side drivers (e-government performance, governance quality) and demand-side drivers (willingness to use, citizen input, trust in government, cultural values, digital skills). In addition, a third analytical theme, "meaningful outcomes," was incorporated to address gaps in the literature concerning the impact of e-participation on policy processes and service delivery (Fung, 2015). The literature distinguishes between instrumental outcomes, such as efficiency gains, accessibility, and cost reduction, and transformative outcomes, such as empowerment and the institutionalization of citizen voice (Macintosh, 2004; Medaglia, 2012; Sæbø, Rose & Flak, 2008). Subsequently, an inductive coding process was applied to the collected data to identify additional emerging sub-themes and contextual dynamics relevant to the case study. The table below provides a summary of the thematic analysis results for the Citizens' Guide to the Budget case study.

Table 11: Summary Results Thematic Analysis Citizen Guide to the Budget

Theme	Sub-theme	Example of a quote that represents this theme
Supply-side		
E-Government Performance	Limited ICT infrastructure and Digital divides	*"Limited internet access and ICT infrastructure hinder participation in many regions." (Citizen Report Card, 2022)*
	Underdeveloped digital tools and weak system integration	*"The MEIS lacks the integration and robustness needed to facilitate effective feedback loops between citizens and authorities" (UNICEF)*
	Strong focus on Capacity Building for citizens and local leaders by CSOs Knowledge from capacity building remains latent in the absence of institutionalization of e-participation	*"..CSOs do a lot of capacity building" (NAR 2)* *"..citizens are taken through what is in the guide."(CLADHO 1)*
Governance Quality	Top-down governance	*"Decisions are often made at higher levels without adequate local engagement or feedback." (Norwegian People's Aid)*
	Coordination issues between local and central government	*"There are delays in the feedback loop between local councils and national authorities, leading to unmet priorities at the grassroots level." (UNICEF)*
	Lack of Institutionalization	*"Some districts struggle to institutionalize participatory practices, which weakens their impact on national planning." (AJPRODHO 2)*
	Civil society plays a key role as mediator, ensuring accountability	*"When leaders fail to act, civil society takes issues to higher authorities, ensuring accountability."(User 2)*
Demand-side		
Willingness to Use	Low willingness to use	*"Our level of e-participation is still low." (CLADHO 2)*
	Low knowledge and confidence to engage	*Citizens have a limited understanding of the budgeting process and lack knowledge of how decisions about local and national budgets are made."(Norwegian People's Aid)* *"Many citizens, especially older generations, fear being perceived as ignorant or critical when engaging with leaders. Sharing concerns openly requires not only awareness but also confidence and capacity." (User 2)"*
	Existing participatory mechanisms not Youth friendly	*"Traditional mechanisms lack creativity and are not youth-friendly approaches." (NAR 1)*
		"When we see that our engagement leads to real change, it motivates us to engage further" (User 1).

Theme	Sub-theme	Example of a quote that represents this theme
Citizen Input	Citizen Input collected verbally during mandatory participatory practices	*"Citizens participate in Umuganda... it is mandatory and helps align community needs with national development priorities" (CLADHO 2)* *"the way citizens' concerns are collected and dealt with at the local level, is still predominantly traditional, actually not even paper based" (NAR 2)*
	Limited space for genuine participation and citizen influence	*"Agenda-setting is led by elites, limiting genuine participation" (User 1).*
	Citizens demand more accountability on how their input has been reflected in the budget	*"You came here, you asked for our priorities, so why weren't they implemented?" (LODA).*
Trust in Government	Distrust in local leaders	*"Agenda-setting is led by local elites, limiting genuine participation." (User 1)*
	Marginalized groups less likely to participate due to lingering distrust	*"Citizens from marginalized groups and those affected by historical trauma are less likely to participate actively due to lingering distrust and fear of authority figures." (NAR 1)*
Cultural Values	Culture of silence and obedience towards authority	*Historically, Rwandans refrained from openly expressing their views. There was a culture of silence where decisions were made by a few political elites with no input from citizens." (Norwegian People's Aid)*
Digital Skills	Limited digital literacy due to pervasive digital divides in access to technology and devices	*"Digital literacy remains a significant barrier to participation, as many citizens lack the skills needed to navigate digital platforms effectively." (CLADHO 2)* *"The tools are there, but people don't always know how to use them. So, they stick to what they know—talking to local leaders during meetings." (LODA)*
Meaningful Outcomes		
Instrumental Outcomes	Anecdotal evidence of awareness raising from capacity building efforts, but potential outcomes undermined by participation–impact gap	*"There is an improvement in terms of capacities compared to the year when we started this exercise, but the capacity gap is still there." (LODA)* *"At first the local government couldn't understand; but little by little some of the districts understood the importance of engaging with citizens" (NAR 2)*
Transformative Outcomes	Lack of formal mechanisms to institutionalize the guide, making the initiative mainly tokenistic	*"People tell us they want to know how their priorities are reflected in the projects, but sometimes the link isn't clear," (LODA)*

The following discussion explores the primary findings emerging from the data analysis, structured according to the thematic framework outlined in the summary tables above.

Supply-side Drivers

E-Government Performance.

The Citizens' Guide to the Budget is constrained by limited internet access, weak ICT infrastructure, underused digital tools, poor system integration and digital divides. CSOs play a primary role in building capacity focused mainly on human rights, budget planning and participatory practices for both local leaders and citizens.

Digital infrastructure remains a key barrier to e-participation, particularly in rural areas where limited access to electricity, low internet penetration, low mobile phone ownership restricts e-participation. As noted by an informant: *"Accessing e-governance requires power and ICT equipment that are not available across all income groups."* (Digital Divides or Dividends, 2022*)*. This disparity underscores broader issues of income inequality and unequal access to technology, disproportionately affecting marginalized and rural communities. "*Limited internet access and ICT infrastructure hinder participation in many regions.*" (Citizen Report Card, 2022).

These challenges explain why the Citizens' Guide to the Budget, though available online, remains out of reach, as *"Many people cannot understand the e-channels, hence the reliance on physical guides."* (CLADHO 1) Another notable challenge is the Monitoring and Evaluation Information System (MEIS) managed by LODA, which is underutilized and faces operational challenges. LODA has an MoU with CLADHO to collaborate on issues related to the Citizens' Guide. The MEIS is designed with the objective to collect, document, and store citizen inputs at the district, sector, and village levels, serving as a centralized database for identifying community priorities. These inputs, gathered through structured processes such as Home Grown Solutions and community assemblies, are expected to inform national planning and budgeting processes.

However, the system suffers from design flaws and weak implementation. The objective of documenting and linking citizens priorities with funded projects remains a major hurdle. *"Sometimes the technical staff at the local level may forget to link the project with the citizens' priorities. If they don't link, we may not know if the project is responding to the citizens' priorities." (LODA)* And while the system could significantly enhance transparency and accountability by generating reports and tracking project implementation, its current limitations highlight the need for optimization.

This reflects both weak local administration capacity and insufficient system robustness to provide *"an effective feedback loop between citizens and authorities"* (*UNICEF*). Informants stressed the

need for better integration between MEIS and CLADHO's outreach effort "*to avoid duplicating processes and ensure that citizen inputs are consistently tracked and reported"* (LODA).

Capacity building emerged as a central sub-theme, aimed at addressing knowledge and skills gaps among both citizens and local leaders to enable more effective engagement in the budget process. CSOs play a primary role in building capacity focusing on participatory practices, budget planning and human rights: "*CSOs do a lot of capacity building."(*NAR 2) Yet it remained unclear during the discovery process whether local government staff managing MEIS receive technical training. Local leaders are trained *"to improve governance and foster participation at all levels"* (NAR 2*)*. Furthermore, the interviews highlighted the perception of leaders regarding the contributions from citizens, noting that these are often seen as lacking in quality which led to an emphasis on capacity building to improve the quality of inputs. *"Leaders complained that the quality of ideas coming from youth and citizens are not valid or of high quality."(*NAR 2)

While citizens receive training on human rights and budgetary planning, the extent to which this knowledge is translated into practice is unclear. For capacity building efforts to be effective, citizens must also have meaningful opportunities to apply the knowledge and skills they acquire through active participation in decision-making processes. This may not be the case with the Citizens' Guide which relies on participatory practices that are not deliberative in nature. As one informant explained, the *Budget Guide is* disseminated through *Umuganda* meetings where citizens are *"taken through what is in the guide"* (CLADHO 1) while citizens also receive *"human rights"* training (NAR 1). These initiatives help build awareness and knowledge, but they also underscore a broader challenge: knowledge can only become empowering when accompanied by institutional arrangements that allow citizens to put it into practice and meaningfully shape public decisions.

Furthermore, capacity building efforts are supported by contributions from international organizations such as Norwegian People's Aid and UNICEF. These organizations provide financial and logistical support, ensuring that the capacity building activities reach a broader audience. NPA, for instance, promotes the use of participation tools such as the Community Score Card (CSC) model, which engages citizens, local leaders, service providers, and the government in constructive dialogues on community issues at the grassroots level. UNICEF collaborates with CLADHO to empower children and youth, enabling their participation in the planning and budgeting process. The process of capacity building involves direct, in-person engagements. These organizations conduct workshops, training sessions, and community meetings to demystify budget planning and enhance understanding of the government's financial allocations. However, these programs are often limited in scale and heavily reliant on external donor funding, raising questions about their sustainability.

Governance Quality

The budget process is characterized by its top-down structure, with decision-making concentrated at the central level. Although the Ministry of Finance engaged civil society *"to initiate an open budget initiative"* (CLADHO 1), *"decisions are often made at higher levels without adequate local engagement"* (Norwegian People's Aid). Weak coordination further undermines participation: *"there are delays in the feedback loops between local councils and national authorities"* (UNICEF), and *"some districts struggle to institutionalize participatory practices, which weakens their impact on national planning"* (AJPRODHO 2). Within this system, CSOs play a moderating role, bridging gaps in administration, building capacity, and advocating for accountability. As one respondent noted, "*when leaders fail to act, civil society takes issues to higher authorities, ensuring accountability"* (User 2). Overall, participatory practices remain largely tokenistic, serving as accountability tools over local government rather than genuine spaces for citizen decision-making.

Rwanda's participatory mechanisms are predominantly top-down in nature, often originating from central authorities *"there are so many established citizen participation mechanisms, mostly state-led"* (Norwegian People's Aid). For instance, *"Citizens participate in Umuganda... it is mandatory and helps align community needs with national development priorities"* (CLADHO 2). Such participation approaches, in particular, reflect a hierarchical power dynamic. Platforms are often designed and deployed by central institutions to collect feedback, prioritizing data collection or capacitate communities. While decentralized planning allows councils to *"approve development strategies based on grassroots priorities"* (LODA), the limited grassroots involvement in shaping participatory tools limits their potential to drive substantive change.

Despite efforts to decentralize and place local government at the heart of public policy efforts, insights from interviews pointed to gaps in communication, coordination, technical capacity and implementation which limit the impact of participatory budgeting practices. Participants discussed coordination challenges between central and local government and shortcomings in institutionalizing participatory practices by local leaders and government agencies. While mandates are assigned to different local forms of government on the collection of citizen priorities, *"There are delays in the feedback loop between local councils and national authorities, leading to unmet priorities at the grassroots level."* (UNICEF) As a result *"Some districts struggle to institutionalize participatory practices, which weakens their impact on national planning."* (AJPRODHO 2)

Coordination issues also exist between CLADHO and LODA. For example, the MEIS system used by LODA and the citizen engagement activities conducted by CLADHO operate independently, sometimes resulting in missed opportunities for collaboration and weakening reporting practices. *"We need to connect MEIS data with CLADHO's outreach efforts to avoid duplicating processes and ensure that citizen inputs are consistently tracked and reported." (LODA)*

Here too, civil society emerges as an important player, specifically as a mediator between central and local government as well as between citizens and government. *"When leaders fail to act, civil society takes issues to higher authorities, ensuring accountability." (User 2)*

These challenges highlight the misalignment between policy commitments articulated in strategic documents and their implementation in practice. They also reveal underlying power asymmetries between national and local actors, where decision-making authority and control over resources remain concentrated at higher levels of government, limiting the extent to which local priorities can influence outcomes. This points to the need for stronger systems of coordination, accountability, and downward responsiveness to bridge the divide between local and national levels.

Demand-Side Dimension

Willingness to Use

Genuine participation is limited by lack of knowledge about the budget processes, low confidence, issues of inclusion as well as perceived usefulness of participating. Furthermore, efforts to increase youth engagement emerged as an important sub-theme.

Citizens lack awareness of how to effectively contribute and what their roles within the budget planning process is. This gap extends to understanding budgetary issues: *"Citizens have a limited understanding of the budgeting process and lack knowledge of how decisions about local and national budgets are made."(Norwegian People's Aid)*

The issue of confidence is another barrier that significantly impacts citizens' willingness to engage in participatory governance, as many feel unprepared to articulate their concerns or challenge authority figures. *"Many citizens, especially older generations, fear being perceived as ignorant or critical when engaging with leaders. Sharing concerns openly requires not only awareness but also confidence and capacity." (User 2)*

Youth engagement emerged as an important sub-theme, being a key government priority. *"Top priority has been to strengthen the structures of youth leadership. Because nationally we have the National Youth Council…..a constitutional structure which represents the youth down to the smallest administrative entity." (NAR 2)* Traditional participation mechanisms however were seen as inadequate, and failing to capture the interest of young people. Informants described them as *"lacking creativity and not youth-friendly"* (NAR 1).

To address this, stakeholders have proposed innovative strategies, such as creating engaging spaces tailored to youth interests. Examples include leveraging arts, sports, and other creative activities to foster discussions on governance issues. As a representative from AJPRODHO noted,

"The creation of spaces which are more interesting to young people, such as arts or football, engages them on issues pertaining to governance." Furthermore, small, community-based spaces with diverse citizen representation provide a platform for ongoing capacity building, particularly benefiting marginalized groups like women and youth. This approach allows young people to develop a deeper understanding of policy issues and engage more openly with leaders. One participant emphasized, *"Youth are not informed and don't know where to ask for guidance. After being trained, I realized it is very important to participate."* (User 1) Another participant noted *"Young people don't have much experience; young people can make a change, they are hungry for change."* (User 2)

Another issue appears to be that the process of agenda setting for budget hearings within communities is not seen as inclusive or concerning the interests of young people:: "*despite the potential we are seeing for the youth"..."the youth in particular don't find a huge interest in attending because some of the issues which are discussed in the citizen participation gatherings do not necessarily speak to the interest of youth and their top priorities."(NAR 1)*

Yet, the interviews pointed out that with the right approaches and tools, youth can be eager to more meaningfully participate in policy discussions that concern issues close to them: *"Youth tend to provide strong ideas about their issues, like clean water and reducing teen pregnancies." (CLADHO 2)."From my experience as a trainer. Something that amazed me was that there were many young people who were so eager and excited to learn. And also to see how quickly they learned and wanted to grow and share their knowledge." (*AJPRODHO 2)

Finally, willingness appears to be influenced by perceived outcomes and whether participation produces tangible results. As one participant noted, *"When we see that our engagement leads to real change, it motivates us to engage further"* (User 1). This suggests that citizens are more likely to participate when they feel their input is taken seriously, translated into visible actions, and communicated back through clear feedback loops, reinforcing trust and a sense of efficacy.

Citizen Input

Citizen input for the national budget is gathered through village assemblies, HGS and pre-budget hearings organized by CLADHO and supported by LODA. Concerns raised by citizens often emphasized critical priorities such as education, healthcare, and access to clean water. *"In rural areas, feedback frequently focuses on basic needs like schools and water supply,"* noted a UNICEF representative.

The reliance on traditional HGS, particularly *Umuganda* and *Imihigo*, to convene citizens and collect input is seen as ill-suited for genuine deliberation, as participation is mandatory, procedural and shaped by hierarchical norms. These convenings position citizens more as information recipients rather than active participants and co-creators: *"The Budget guide is prepared and*

disseminated by leveraging the Umuganda meetings where citizens are taken through what is in the guide." (CLADHO 2) Furthermore, these mechanisms appear to be used as accountability tools for local government. For example *Imihigo* involves performance contracts in which local leaders commit to delivering on various indicators, including the budget and planned projects. As one official explained, *"The citizens ask many questions (of the leaders), if they don't achieve what was committed, especially through the Imihigo performance contracts"* (LODA).

Moreover, e-participation remains underutilized, as the modality for capturing input is still predominantly traditional, lacking digitization or systematic tracking: *"The way citizens' concerns are collected and dealt with at the local level is still predominantly traditional, actually not even paper based."* (NAR 2) Where social media is used for participation purposes, it is proving very effective. *"Social media is an increasingly important participation channel, especially for those citizens who are educated, and have some level of digital literacy. For example, Twitter has become a very strong window for citizens to directly engage, including with the top leadership of the country."* (Norwegian People's Aid).

Citizens also seek clarity and demand accountability on how their priorities influence budget decisions. Citizens value follow-up communication to understand how their inputs have been considered. *"People tell us they want to know how their priorities are reflected in the projects, but sometimes the link isn't clear,"* shared a representative from LODA. They further remarked, *"Communities are aware of the budgeting process and hold us accountable. They ask, 'You came here, you asked for our priorities, so why weren't they implemented?"* (LODA).

Trust in Government

While the central government is perceived as a *"strong stakeholder"* that *"comes to present and to listen to the people"* (CLADHO 1), local leaders are often viewed as *"political and economic elites"* who dominate the agenda-setting process, thereby limiting genuine participation (User 1). Informant insights emphasized that distrust remains a key constraint on adoption, particularly among marginalized and underrepresented groups, including youth, women, minorities, who are less likely to participate meaningfully in participation initiatives. As one source noted, *"Citizens from marginalized groups and those affected by historical trauma are less likely to participate actively due to lingering distrust and fear of authority figures"* (NAR 1).

Cultural Values

The cultural context significantly influences citizen participation in governance and budgeting processes in Rwanda. A deeply entrenched culture of respect and obedience toward authority has created barriers to genuine engagement. As one interviewee explained, *"Historically, citizens were expected to obey leaders without exercising critical thinking"* (NAR 2).

Moreover, traditional participation practices such as Umuganda and Imihigo, can inadvertently prioritize compliance over critical dialogue and are often perceived as reinforcing hierarchical power structures. A representative from Norwegian People's Aid explained that *"historically, Rwandans refrained from openly expressing their views"* and that there was *"a culture of silence where decisions were made by a few political elites with no input from citizens."* Even today, some citizens remain hesitant to openly raise concerns, as questioning authority can feel unfamiliar or uncomfortable. And although there are signs that citizens are gradually becoming more vocal, interviewees stressed that the transition from a culture of silence to active participation *"is still in progress and requires sustained effort"* (Norwegian People's Aid). These cultural dynamics are particularly pronounced for marginal groups and youth, who face additional barriers in expressing their perspectives within such hierarchical settings, often resulting in participation that is symbolic rather than genuinely deliberative.

Digital Skills

Low digital literacy remains widespread in Rwanda, limiting citizens' ability to engage effectively with digital participation tools. As one government informant noted, *"The tools are there, but people don't always know how to use them. So, they stick to what they know—talking to local leaders during meetings"* (LODA). These challenges are compounded by unequal access to devices and connectivity, which disproportionately affects rural populations (CLADHO 1).

Digital skills constraints are also reflected in national policy documents such as the ICT Sector Strategic Plan (2019–2024) which reports that *"only 8% of citizens have basic digital skills,"* and emphasizes that access to digital devices remains unevenly distributed across the population. As a result, interviews revealed that many citizens continue to rely on manual or in-person channels to submit and track budget inputs, despite the availability of digital tools.

In response, the government and CSOs have launched initiatives such as the Digital Ambassadors Program which aims to strengthen digital skills and expand uptake of tools like the Citizens' Guide to the Budget. *"The program plans to train 5 million citizens to increase digital adoption,"* Additionally, ongoing efforts to digitize the Citizens' Guide, such as creating a mobile-accessible budget portal, are intended to support broader access and engagement.

Meaningful Outcomes

Evidence of meaningful outcomes remains anecdotal. There are weak reporting practices and feedback loops, which make outcomes difficult to measure. And while the official objective of the initiative is to influence policy and budgetary outcomes, in practice, the Citizens' Guide primarily operates as a top-down information dissemination mechanism that raises awareness, offers capacity building for civic engagement and keeps local government in check.

Interviews suggested that the Guide is "*raising awareness among citizens about their role in governance and how they can engage with the budgeting process"* (CLADHO 1). Among local leaders, initial resistance is giving way to gradual acceptance: *"At first the local government couldn't understand; but little by little some of the districts understood the importance of engaging with citizens"* (NAR 2).

Interviews also highlighted that capacity building has been gradually improving how citizens articulate their needs and hold their leaders accountable. Citing improvements in terms of capacities and empowerment of citizens to *" hold us accountable"* compared to the beginning of the program, however noting that *"the capacity gap is still there."* (LODA)

The biggest challenge is that citizen engagement is largely tokenistic, with underutilized mechanisms to institutionalize citizen feedback at the local level. These underlying challenges are exacerbated by weak formal reporting mechanisms which undermine the ability to track how citizen engagement shapes outcomes. More fundamentally, the findings suggest that participation functions within asymmetric power relations. While citizens are invited to contribute views, institutional actors retain primary control over agenda setting, priority definition, and the organization of citizen input. Without properly addressing supply-side barriers, re-balancing power dynamics and reenvisioning the guide's participatory mechanism these gains will remain anecdotal, reflecting a large participation-impact gap.

5.2 Case Study Two: Irembo.Gov

Irembo.Gov: Rwanda's integrated cross-sectorial e-government platform

Irembo.Gov is a technology company founded in Kigali in 2014 to support Rwanda's transition into a digital society. As a Public Private Partnership (PPP) between the Government of Rwanda (GoR) and Rwanda Online Platform Limited, the GoR granted the concession to Rwanda Online Platform to build and operate Irembo for 25 years, after which it will be transferred back to the GoR. As a result of this partnership, Rwanda launched the country's first e-government platform Irembo.Gov in 2015. The GoR is a majority shareholder in Irembo.

The implementation of the Irembo.Gov initiative includes key stakeholders, specifically the Ministry of Information Technology and Communications (MITEC) and the Rwanda Information Society Agency (RISA). RISA is the agency under MITEC mandated to lead the implementation of digital transformation efforts in Rwanda and coordinate Irembo.Gov on the side of the government. The government entities whose services are digitalized and made available on Irembo.Gov are also key stakeholders in the service delivery process. The Ministry of Local Government (MINALOC), including the Local Administrative Entities Development Agency (LODA) and all 30 Rwanda districts are becoming more involved in the roll-out and uptake of Irembo services.

In Kinyarwanda, Irembo means “gateway” or “door” and represents literal access to an expanding array of government services. Universally, Irembo is portrayed as an African success story for the digitalization of government services and government collaboration. Increased operational efficiency, reduced government spending, better trust in government, easier and quicker access to services, and cheaper services to citizens are all seen as potential benefits of e-government, which is crucial for Rwanda’s aspiration to become an IT nation and a regional powerhouse for digital services and business (Mukamurenzi et al, 2019).

As of the time of the data collection process, the platform had onboarded more than 100 government services and handles over 7,000 daily users[17] in partnership with 18 government institutions. Currently, Irembo is working with different government entities to re-engineer and onboard 600 more services (Interview with Irembo representative, June 2023).

On the platform, services are grouped under the following categories: Family, Immigration and Emigration, Identification, Land, Police, Notarization And Gazette Service, Health, Education, Rwanda Museums, Transport, Criminal Record and Media. Users register on the platform for free and can access the required e-service which range different costs, from 500 Frw (0.35 cents) to up to 100,000 Frw (68 USD). Back-end processing in most cases is done by the relevant ministry or government entity and the service provision is subject to Service Level Agreements (SLA) between Irembo and the respective government entity to ensure quality of service. The documents are then sent digitally to the applicant. The platform is adapted to mobile phone interfaces. Irembo supports the following languages Kinyarwanda, English and French.

The most popular services, representing 20% of all applications, are civil registration services, such as marriage certificates, birth certificates and certificates of being single, managed by the Ministry of Local Government (MINALOC). Streamlining the process of service provision is one of the key roles Irembo plays in advancing e-government efforts. The legacy process, before the onboarding of civil registration services onto Irembo, citizens were required to go through various bureaucratic steps to apply for civil certificates. In close collaboration with MINALOC, Irembo helped digitize a number of services by eliminating the need for a physical application or collection of documents and establishing a process of visibility and transparency for both the applicant and the ministry.

Service delivery is facilitated through Irembo’s Agent Network as well as directly through Irmebo’s self-service channel. The network is a critical component of Irembo’s service delivery model, especially in rural areas, as it helps users in navigating the application process through Kiosks, making payments, and resolving service-related issues.

[17] *https://www.newtimes.co.rw/article/2881/news/rwanda/irembo-police-move-to-fix-driving-test-hitches*

5.2.1 Main Stakeholders

Rwanda Information Society Authority (RISA) coordinates Rwanda's digital transformation efforts, providing policy and technical support to ensure seamless integration of government services on Irembo. It also facilitates legal and regulatory adjustments needed for service digitalization and supports capacity building initiatives like the Digital Ambassadors Program.

Irembo's Agent Network. Irembo's agent network is a large, distributed network of physical service points, also called Kiosks. These are usually housed within small shops run by independent vendors who may also operate other businesses. After completing training and ensuring that these vendors have sufficient space and the right equipment onsite, Irembo certifies them as part of the Agent Network. Comprising over 5,000 agents across the country, the network ensures inclusive access to Irembo services, particularly for citizens without smartphones, internet, or those lacking digital literacy. For a fee, agents assist users in navigating the application process, filling and scanning forms, making payments, uploading documents and managing the service process cycle.

Government Agencies. These agencies are the providers of the services offered through Irembo. They collaborate with Irembo during the re-engineering and integration phases, define service workflows, and monitor compliance with SLAs. In some cases, agencies retain backend service management, while Irembo handles citizen-facing operations.

Users. Citizens, businesses, and organizations who access government services through Irembo are the platform's end-users. Their participation varies from using self-service channels via Irembo's interfaces or relying on the Agent Network. Users also provide valuable feedback through surveys, social media, and the agent network, which informs platform improvements.

Rwanda Governance Board (RGB). RGB evaluates the performance of Irembo services through Citizen Scorecards (different scorecards from the ones deployed by CSOs at the grassroots level and discussed under the Citizens' Guide to the Budget) and surveys. It plays a critical role in promoting good governance by collecting citizen feedback on service delivery and ensuring accountability among stakeholders, including Irembo and government agencies. RGB is mandated to promote good governance principles and monitor service delivery across public and private sector institutions as well as CSOs. RGB is mandated as an autonomous institution in exercising its mission. RGB submits its Annual Report and Action Plan directly to the President of the Republic and to the Parliament.

5.2.2 Case Analysis

The analysis highlights supply-side drivers (e-government performance, governance quality) and demand-side drivers (willingness to use, citizen input, trust in government, cultural values, digital skills) serving as the main deductive themes emerging from the literature. A third theme, "meaningful outcomes," was added to address gaps in understanding the impact of e-participation,

particularly by shaping policy and improving service delivery (Fung, 2015). The literature distinguishes between instrumental outcomes (efficiency, accessibility gains, cost reduction etc.) and transformative outcomes (empowerment, institutionalized citizen voice etc.) (Macintosh, 2004; Medaglia, 2012; Sæbø, Rose & Flak, 2008). Subsequently, an inductive coding process was applied to the collected data. The inductive phase aimed to identify emerging sub-themes. The table below, provides a summary of the results of the thematic analysis for the Irembo case study.

Table 12: Summary Results Thematic Analysis Irembo

Themes	Sub-theme	Example of a quote that represents this theme
Supply-Side Drivers		
E-Government Performance	Infrastructure constraints and digital divides	*"Accessing e-governance requires access to power and ICT equipment that are not available across all income groups" (Digital Divides or Dividends, 2022).*
	Multi-channel delivery system	*"Kiosks allow citizens without smartphones or internet access to use these services." (Irembo 2)*
	Capacity building and outreach campaigns	*"Improving digital literacy is more important than anything else because the aim is to have more self-service users."(RISA)* *"Byikorere is helping reach communities and explain how they can go to the portal, interact with it, and apply for services themselves." (RISA)*
Governance Quality	Governance and institutional coordination supported by Service Level Agreements (SLAs)	*"SLAs allow for accountability and clear processes that help citizens obtain access to the service in a timely and satisfactory way". (Irembo 1)*
	Strong emphasis on performance monitoring and user satisfaction; both internal and external	*"RGB collects citizens' feedback every year, asking about Irembo use and service accessibility." (RGB 2023)*
Demand-Side Drivers		
Willingness to Use	Low willingness to use Irembo's self-service channel	*"Most users currently rely on agents, which add costs to the service" (Irembo 3).*
Citizen Input	Services are designed without engaging citizens	*"Once the service has been re-designed, they test internally. An Irembo employee logs in as a pretend citizen..." Rwanda Information Society Agency (RISA)*
	Citizen feedback is actively collected and considered after services are launched through a range of channels.	*"We review everything: from the crazy ideas to the feasible ones" (Irembo 3).*
		Citizens' complaints about "overcharging of application and service fees by some agents" (User 1)
	Social media serves as an effective two-way communication channel	*"X is an active social platform where responses are provided within a few hours or days" (User 2)*

Themes	Sub-theme	Example of a quote that represents this theme
Cultural Values	Stigma about using technology, especially among the elderly	*"stigma of using digital platforms among older people" (User 3).*
	Stigma about government services	*"There's this stigma about thinking that government services are difficult. And people feel they need to be knowledgeable." (Irembo 1)*
Trust in Government	Low trust in technology and skepticism towards digital payments	*"Citizens prefer to pay an agent in cash rather than use Irembo's mobile payment system." (RISA)*
Digital Skills	Low digital literacy and confidence in using technology	*"The majority of our population doesn't know how to use digital platforms, and this hinders e-service adoption." (RISA)* *"People feel more confident when they go to an agent rather than doing it themselves because they trust the agent to get it right" (User 2).*
Meaningful Outcomes		
Instrumental Outcomes	Improvements in service delivery and accessibility through Irembo's multi-channel approach	*"Our kiosks and the USSD protocol make services accessible to citizens who might otherwise be excluded due to a lack of digital resources," (Irembo 1)*
	Reduced administrative costs, and lower corruption risks, furthermore	*"Irembo, which is predominantly service delivery and has really reduced or the cost of service" (NAR 1)* *"Before Irembo you could bribe a public service provider to speed things up. Irembo really brought transparency into the public service delivery" (User 2).*
Transformative outcomes	Institutional innovation by becoming more responsive and attuned to actively seeking and incorporating user inputs	*"continuous improvement is really big part of Irembo's philosophy" (Irembo 1)* *"We added a message of condolences to make the death certificate process more human." (Irembo 1)*

The following discussion explores the primary findings emerging from the data analysis, structured according to the thematic framework outlined in the summary tables above.

Supply-Side Drivers

E-Government Performance

Irembo.Gov operates under an ambitious mission: *"to digitize all services and ensure there's zero trip and zero paper and to reduce bureaucracy as much as possible"* (Irembo 1). By the end of 2023, Irembo.Gov had digitized over 100 services in collaboration with 18 institutions, with plans

to onboard 600 more (Irembo 1). Portrait as a digital success story within Rwanda and Africa, Irembo is even working to *"export its business model to other countries in Africa, as part of its consulting arm"* (Irembo 3).

Despite this progress, the goal of "zero trip, zero paper" remains aspirational due to infrastructure constraints and digital divides. According to RISA, approximately 96% of users rely on agent-supported kiosks rather than the intended online self-service platform. Barriers include limited internet connectivity, affordability of ICT equipment, and low digital literacy. As it was emphasized, *"accessing e-governance requires access to power and ICT equipment that are not available across all income groups"* (Digital Divides or Dividends, 2022).

To overcome access barriers, Irembo operates a multi-channel delivery system, anchored by a network of over 5,000 agents operating kiosks across the country and an USSD[18][19] functionality which further expands access for users with feature (basic) cell phones. The USSD feature allows users to use Irembo directly for simple services through text messages. These agents support citizens in applying for services, making payments, and navigating the digital platform. As one Irembo employee explained, *"Kiosks allow citizens who don't have smartphones or internet access to use these services"* (Irembo 2). Agents charge a facilitation fee for submitting applications on behalf of users. This is paid in addition to the official service fee required for the government service itself.

Irembo also has placed emphasis on re-designing and re-engineering existing government services to make services simpler and more user friendly. The effort is done by Irembo's business analysts and the respective government entity, with the coordination of RISA. Irembo also strives to change existing government policies and laws in order to facilitate service optimization and issuance of digital certificates through the platform in order to replace paper-based government certificates and documents. The design phase tries to assume a most optimal scenario for citizens using the service. According to the interviews, this step does not involve citizens directly. Interviews indicate that the *maxim and key objectives* under which Irembo operates are to *"ensure that the service design has fewer workflows"* (Irembo 1) and achieve the aforementioned goal of *"zero trips, zero paper"* for the citizens.

[18] *Unstructured Supplementary Service Data (USSD), sometimes referred to as "quick codes" or "feature codes", is a communications protocol used by GSM cellular telephones. The USSD protocol is most commonly used for sending short commands and requests, without incurring connection or service charges. In Africa, USSD is especially attractive given its low barrier to entry, easy of use and low cost. USSD is available on almost all mobile phones, including basic feature phones, which are still prevalent in many parts of Africa. This ensures that a large portion of the population can access USSD-based services. USSD and USSI services do not require an internet connection, making it accessible in areas with limited or no data coverage. This is particularly important in rural and remote regions of Africa.*

[19] *https://telecoms.adaptit.tech/blog/ussd-in-africas-digital-ecosystem/#Why_has_SSD_and_USSI_technology_become_the_cornerstone_of_communication_in_Africa*

In response to the low adoption, the government and Irembo have prioritized capacity building and outreach campaigns. *"Improving digital literacy is more important than anything else because the aim is to have more self-service users,"* emphasized a RISA representative. A key initiative is the Byikorere campaign launched in 2023, aimed at addressing digital literacy gaps and encouraging greater independence in accessing e-government services. The name "Byikorere" translates to "Do It Yourself" in Kinyarwanda. Through targeted training programs and community-based outreach, users are encouraged to create accounts, complete applications, and track service statuses themselves. In the implementation "Byikorere," Iremno leveraged the Digital Ambassadors initiative, which has trained over 1,500 ambassadors nationwide, by empowering local champions to teach basic digital skills and promote the use of self-service channels. *"Byikorere is helping reach communities and explain how they can go to the portal, interact with it, and apply for services themselves." (RISA)*

Outreach campaigns also aim to address logistical and psychological barriers. They emphasize the convenience, efficiency, and cost-effectiveness of self-service while providing hands-on guidance to help users overcome initial hesitations. "*What can be improved is to increase awareness in the citizen, to reach communities and explain how they can go to the portal, interact with it, and solve for themselves on the system." (RISA)*

Governance Quality

Institutional coordination and governance of Irembo's e-services are supported through Service Level Agreements (SLAs) with government agencies, ensuring clarity on roles, timelines, and communication protocols. There is a strong emphasis on performance monitoring and user satisfaction. Performance is also monitored independently through Rwanda Governance Board (RGB) which measures user satisfaction through national surveys, citizen scorecards, and HGS, such as Imihigo performance contracts.

Governance and institutional coordination are supported by Service Level Agreements (SLAs) between Irembo and government agencies, which are the original custodians of the service. *"SLAs allow for accountability and clear processes that help citizens obtain access to the service in a timely and satisfactory way". (Irembo 1)* In some instances, Irembo has taken over the entire process lifecycle of specific services. In such cases, where service delivery is outsourced to Irembo, Irembo has full visibility of how applications are moving along the e-service process flow. According to insights from interviews, *"under that scenario, providing feedback to citizens when they have queries is much easier."(Irembo 1)* Where government agencies handle their own backend, Irembo has clearly spelled out service delivery timelines as part of the SLAs and maintains frequent communication with the service provider. SLAs are generally respected and Irembo has not experienced many challenges, with notable exceptions during the COVID-19 pandemic when there was a backlog of applications, especially for driving licenses.

Irembo conducts a monthly benchmarking exercise which ranks the different government agencies under the umbrella of MINALOC in each district on how they perform on the existing SLAs for each service they provide. These evaluations are for internal use and not available publicly. The objective is to ensure 100% service delivery and assess what percentage of the applications are done through the self-service channel and what through an agent. When districts fall behind, Irembo engages with the respective agency under MINALOC to improve productivity of personnel and service delivery levels. Insights from interviews, point out that process improvement is attempted when a district scores low on the monthly benchmark exercise and that is handled by the agency itself.

The COVID-19 pandemic spurred Irembo to collaborate more closely with other government actors and accelerate digitization. For example, in response to a large backlog of driving licences, Irembo worked with the Rwanda National Police to enable users to obtain an e-provisional licence instead of a physical driver's ID. Citizens could submit their test registration number to retrieve key details (e.g., name and test scores), and once payment was completed, download and print the e-provisional licence directly from the website. This innovation made the process more efficient and accessible, as traffic police no longer needed to print licences on paper.

There is a strong emphasis on performance monitoring and user service satisfaction is done both internally by Irembo and externally by Rwanda's Governance Board (RGB) through the RGB's Citizen Scorecards and Governance Scorecards.[20] Service Delivery is also monitored through one of the country's HGS, Imihigo contracts.

Irembo conducts ease of use surveys after rendering services to citizens. The platform sends automatic pop-up ease of use surveys which are used to gouge service efficacy and user-friendliness. Social media interactions, specifically through X (former Twitter) are also analyzed to assess service quality and user satisfaction.

Similarly to other government bodies, Irembo is subject to external evaluations through RGB which conducts *"significant independent research and surveys to gauge citizen satisfaction with Irembo services, indicating a proactive approach to understanding and meeting citizen needs." (RGB Interview)* The tool used to evaluate Irembo services is RGB's Citizen Scorecards which are published annually. RGD is mandated to promote good governance principles and monitor service delivery across public and private sector institutions as well as Civil Society Organizations. RGB is independent and doesn't receive instructions from any other institution in exercising its mission.[21] The Citizen Scorecard is nationally representative and is based on survey data focusing on citizens' participation and satisfaction with service delivery as core parts of governance. Its purpose is to enhance good governance practices and the quality-of-service delivery in Rwanda as

[20] https://www.rgb.rw/publications
[21] https://www.rgb.rw/1/about-rgb

perceived by the citizens. "*RGB goes out into the field every year to collect citizens' feedback, including on Irembo services" (RGB)*

As part of the Imihigo process, one of Rwanda's notable HGSs, each district also commits to and consecutively reports on the delivery of quality public services. The commitment to deliver encompasses a number of Local Government entities at the district level which are part of the Irembo digitized services. The key indicator of achievement is the % of Irembo services delivered by Local Government within the timeframe indicated in the SLAs. As discussed earlier the long-term goal is to ensure 100% delivery. As an example, the city of Kigali reports a 98 delivery target for 2022 in their Imihigo contract (City of Kigali, 2021/2022 Imihigo Contract).[22]

Demand-Side Drivers

Willingness to Use: Overcoming Barriers to Self-Service Adoption

Despite significant strides in expanding digital access, citizens' willingness to use Irembo's self-service options remains limited. A complex mix of low digital skills, low trust in technology and to a lesser extent cultural preferences, drives the heavy reliance on agents even at added cost, with 96% of users opting for agent-assisted services rather than engaging directly with the platform. *"Most users currently rely on agents, which add costs to the service" (Irembo 3).*

For many, navigating digital systems independently feels daunting. *"People feel more confident when they go to an agent rather than doing it themselves because they trust the agent to get it right,"* explained an Irembo representative (Irembo 2). Lack of awareness compounds the issue, as some citizens are unaware that services are accessible online or through USSD. *"Citizens often rely on agents because they are unaware that they can access these services themselves through USSD or online,"* noted another Irembo representative. *"You can create your own account to apply for yourself, or approach an agent nearby to apply on your behalf. Once the application is approved, you'll receive a message and can download the certificate yourself, or have the agent print it for 200 Rwandan francs."* (Irembo 3)

With only 8% of citizens possessing basic digital skills, many users struggle to create accounts, complete applications, or track their service status independently. A RISA representative observed, *"The majority of our population doesn't know how to use digital platforms, and this hinders e-service adoption."* For those who do engage digitally, high data costs, limited electricity, and inefficient digital receipt management remain persistent barriers.

Citizen Input

[22] https://www.kigalicity.gov.rw/index.php?eID=dumpFile&t=f&f=45062&token=61123caed3ae8d8d1ccfe861a9b6c6652946944f

Citizens are increasingly becoming central to shaping Irembo's service delivery, though their engagement is largely absent in the service design phase, and more prominent through customer support and follow-up feedback collection efforts. Social media also serves as an important channel of communication between citizens and Irembo. Citizens' voices are also captured through external satisfaction surveys, conducted by RGB.

The initial phase of re-designing and re-engineering services is handled without the involvement of citizens. Testing is conducted internally by Irembo employees simulating citizen interactions. *"Once the service has been re-designed, they test internally. An Irembo employee logs in as a pretend citizen, checks for misleading information, ensures steps are easily followed, and validates credential security,"* noted a RISA representative

Irembo has made notable progress in creating platforms for citizen feedback, particularly through its dedicated Customer Support team. Comprising 40 agents, this team handles technical assistance, resolves queries about application delays, and processes suggestions from citizens. *"We have a dedicated team of 40 customer support agents who assist citizens via phone, email, and social media platforms, ensuring timely and effective resolutions,"* an Irembo representative shared. Importantly, citizen feedback is treated as a key input and given due consideration, with ideas ranging from the *"crazy ideas to feasible ones." (Irembo 1)*

One of most effective communication channels has proven to be X (former Twitter) *"where citizens can tweet the institution, request information, and ask questions for clarity. In most cases, responses are provided within a few hours or days." (User 4)*

Citizen inputs have also led to tangible improvements in service integrity and fairness. Complaints about *"overcharging of application and service fees by some agents" (User 1)* have spurred Irembo to take corrective action, conducting audits and addressing malpractices. To ensure transparency, Irembo has instituted clear pricing policies, requiring agents to display accurate price sheets in their shops as well as online monitoring of agent's systems. Regular audits and a management system that oversees onboarding, training, and commission structures have further strengthened accountability across the agent network.

Citizens' voices are also captured through the Citizen Scorecards administered by the Rwanda Governance Board (RGB). Each year, these nationally representative surveys engage over 10,000 citizens to assess various public services, including Irembo. *"They now ask if people use Irembo, how they access it—whether online or via an agent—and how we appreciate the services,"* an Irembo user explained (User 2). These scorecards provide a critical platform for citizens to express their perspectives, ensuring their feedback informs service evaluation.

A scorecard from 2022 indicates that Irembo is increasing in popularity and enjoys a 90.6% satisfaction rate.[23] The available breakdown by gender indicates that the satisfaction rate among men is 89.7% and women 91.3% respectively. The scorecard, however, also points that 96.6% of users still prefer to use an agent to apply for services.

Trust in Government

A key driver of citizens' continued reliance on agents is persistent skepticism toward digital payments. As one respondent noted, *"Citizens prefer to pay an agent in cash rather than use Irembo's mobile payment system"* (RISA). Although Irembo integrates widely used payment options—including credit cards, mobile money, and bank transfers—and provides service status updates via email and SMS, these technical features have not fully translated into confidence in cashless transactions. While transparency initiatives have improved overall user perceptions, trust in digital payment systems remains low, reinforcing a preference for cash-based, intermediary-supported transactions.

Digital Skills

Another persistent challenge is low digital literacy, which remains a key barrier to adoption. For many citizens, navigating digital systems independently feels daunting, and they therefore prefer in-person support from an agent, even when this means paying an additional service fee. As one participant explained, *"People feel more confident when they go to an agent rather than doing it themselves because they trust the agent to get it right"* (User 2).

Cultural Values

Cultural values, specifically cultural norms further shape these preferences, particularly among elderly users and other groups that remain excluded from the digital economy. Adoption challenges are often linked to the *"stigma of using digital platforms among older people"* (User 3). More broadly, cultural expectations and trust dynamics reinforce the appeal of face-to-face interactions: working with an agent aligns more closely with traditional service norms and offers a sense of reliability that digital platforms have not yet fully achieved. This is also compounded by perceptions that digital government services are inherently complex: *"there's this stigma about thinking that government services are difficult. And people feel they need to be knowledgeable"* (Irembo 1).

Meaningful Outcomes

[23] https://www.rgb.rw/index.php?eID=dumpFile&t=f&f=57404&token=09abe5e66f057dab007429b4b8536491594f3c2a

Irembo.Gov has achieved important instrumental outcomes by improving service delivery and accessibility. At the same time, the platform is showing signs of institutional innovation, becoming more responsive and increasingly attuned to actively seeking and incorporating user input to enhance the overall user experience.

Overall, outcomes reflect a system still primarily focused on strengthening the foundations of inclusive service delivery by closing persistent access gaps and building the preconditions for broader digital uptake.

Instrumental Outcomes

Irembo.Gov has achieved important **instrumental outcomes**, particularly by improving service delivery and expanding accessibility through its multi-channel approach. For example, significant efforts have been made to bring the services closer to the people, given existing gaps and barriers. For instance, in addition to the agent network, Irembo introduced solutions specifically designed for individuals without smartphones or internet access. *"Our kiosks and the USSD protocol make services accessible to citizens who might otherwise be excluded due to a lack of digital resources,"* explained an Irembo Representative (Irembo 1).

Stakeholders further associate Irembo with efficiency gains and lower administrative costs, noting that *"Irembo, which is predominantly service delivery, has really reduced the cost of service"* (NAR 1). In addition, the platform is credited with reducing opportunities for informal payments and enhancing transparency in service delivery. As one user recalled, *"Before Irembo you could bribe a public service provider to speed things up. Irembo really brought transparency into the public service delivery"* (User 2).

Transformative Outcomes

Beyond these instrumental gains, there are emerging signs of transformative outcomes, particularly in terms of institutional innovation and a gradual shift toward more responsive, user-centered service design. From a supply-side perspective, this aligns with the view that *"continuous improvement is a really big part of Irembo's philosophy"* (Irembo 1).

What's been driving these improvements is Irembo's increasingly proactive approach in seeking and incorporating user feedback and addressing user capacity constraints, indicating institutional learning and responsiveness.

For example, citizen feedback has also contributed to service integrity reforms. Complaints about *"overcharging of application and service fees by some agents"* (User 1) have prompted Irembo to take corrective action through audits and efforts to address malpractices. Efforts to improve user experience also include strengthening communication channels and leveraging social media for two-way interaction with citizens. As Irembo matures, improvements have become visible in

emotionally sensitive services, signaling a shift toward more citizen-centered service delivery. One example was redesigning the death certificate process after concerns that confirmation messages were being sent from the phone number of the deceased: *"We rectified an emotional sensitivity related to the issuance of a death certificate, in which the confirmations were being sent from the phone of the deceased to the relative. So, we reviewed the process and changed it which makes it much easier on the relatives. We also added a message of condolences. So that just makes things simpler and adds a human dimension to it. It makes someone who is going through a tough time not feel like no one cares."* (Irembo 2).

Community engagement and capacity building efforts through the "Byikorere" (Self-Service) campaign is another good illustration of Irembo's efforts over the past few years to address persistent barriers to self-service adoption. The campaign is essentially a learning-by-doing exercise, where citizens can apply for services themselves with the help of Irembo agents and volunteers. According to Irembo sources, the campaign aims to empower and encourage citizens to use the self-service channel, contribute ideas for improving government services, and collaborate with government agencies in co-creating a more citizen-centric approach to service delivery. As one user shared, *"I feel more empowered that I can do this myself now, but it took a lot of learning from others to build confidence."* (User 3)

5.3. Lessons Learned

The Rwanda case studies highlight the complex interplay between supply and demand-side drivers in shaping e-participation adoption and outcomes. Supply and demand-side drivers intersect primarily through citizen input and capacity building activities, which serve as the main points of citizen–government interaction. Across both cases, however, the supply and demand for e-participation remain relatively low. Participation is driven largely by the government, while social and cultural factors strongly influence citizens' willingness and ability to engage. Opportunities for genuine deliberative participation remain limited.

The two cases nevertheless demonstrate different trajectories. The Citizens' Guide to the Budget emphasizes top-down information dissemination and functions primarily as an accountability instrument through which central authorities oversee local government implementation, rather than as a genuine platform for participatory decision-making. As such, it largely reproduces existing power asymmetries, where citizens are mandated to participate but have limited influence over agenda-setting, decision-making processes, and policy outcomes. By contrast, Irembo.Gov, although initially technology-driven, has gradually become more responsive to user feedback and citizen needs, demonstrating how greater institutional willingness to adapt can help rebalance the relationship between service providers and users.

The prevailing assumption in Rwanda is that citizens lack the capacity to effectively contribute to policymaking or service design, which may help explain the limited government effort to actively

solicit or rather institutionalize citizen input. Communication regarding how citizen contributions are utilized also remains sparse and unclear. While this dynamic has begun to shift in the case of Irembo.Gov, it continues to present an important challenge. Across both cases, institutional willingness and broader power dynamics emerge as key factors shaping the extent to which e-participation can generate meaningful outcomes.

In the case of the **Citizens' Guide to the Budget**, supply and demand-side factors interact in ways that collectively undermine adoption and meaningful engagement. Technical weaknesses in the MEIS system, combined with organizational and human resource limitations, constrain effective feedback loops and reduce the institutionalization of citizen input. The government continues to rely heavily on mandatory traditional participatory practices to provide capacity building and collect feedback, primarily through verbal channels that are poorly suited to deliberative engagement and tend to reinforce hierarchical structures.

On the demand-side, these limitations intersect with low digital literacy, limited citizen capacity, and cultural norms that discourage challenging authority. In hierarchical societies, "power is distributed unequally," making subordinate input neither expected nor easily voiced (Hofstede et al., 2010). These interactions create a participation–impact gap that reduces trust and willingness to engage over time (Medaglia, 2012).

The broader governance environment further reinforces these dynamics. Participation is formally embedded within Rwanda's constitutional and strategic frameworks, including decentralization policies and the National Strategy for Transformation. However, in practice, participation often remains procedural rather than deliberative. As one representative from Never Again Rwanda noted: "*Participation is very entrenched in Rwanda. It is in the constitution, decentralization strategy and NST1. Legally, participation is in the laws and strategies. Now they have to improve the quality of participation.*"

A central component of this initiative is the use of so-called Home-Grown Solutions (HGS); traditional, often mandatory participatory practices that date back to pre-colonial times. In reality, these practices function as the primary mechanism for participation at the local level, bringing citizens together on a regular basis for budgetary discussions with local government officials, often with CSOs serving as mediators. CSOs also leverage these convenings to provide training on civil rights and budget literacy for both citizens and local officials. While HGS are intended to serve as a channel for collecting citizen feedback, deliberations remain largely verbal and are not systematically documented. This is despite the existence of a dedicated digital feedback system under the responsibility of the MINELOC that is reportedly underutilized and that suffers from technical flaws. Citizens further described these practices as insufficiently deliberative, not youth-friendly, and as reinforcing a prevailing culture of obedience and deference to authority, reflecting Rwanda's collectivist traditions.

Another important challenge concerns institutional willingness to genuinely incorporate citizen voice. Communication regarding how citizen contributions influence policy decisions remains sparse and unclear. In the case of the Citizens' Guide to the Budget, there is little written feedback demonstrating how public input shaped budgetary outcomes. This reinforces perceptions that participation is largely symbolic and risks discouraging future engagement.

By contrast, **Irembo.Gov** demonstrates a more dynamic interaction between supply and demand-side drivers. In the case of Irembo.Gov, it could be argued that the government is betting on a long-term plan for the adoption of e-participation. Initially, the emphasis was heavily placed on the technological aspects of building the platforms and digitizing services. Collaborative approaches were not employed, there were no consultations with users or co-production in design. Low uptake of the self-service option, however, pushed the platform to become more innovative and responsive to citizens' needs. This reflected a broader mindset shift, as Irembo actively sought and incorporated citizen feedback to improve usability and address barriers to access. Particularly effective has been the use of X (formerly Twitter) as a two-way interaction platform, where citizens can raise concerns about the platform and receive responses from Irembo within a short timeframe.

Taken together, the Rwanda cases suggest that meaningful e-participation outcomes depend not only on the availability of digital platforms, but on how supply and demand-side drivers are mediated through institutional practices, feedback loops, and governance arrangements. The findings demonstrate that e-participation adoption cannot be explained by technological provision alone. Instead, adoption and outcomes are shaped by broader institutional willingness to incorporate citizen voice, the inclusiveness of participation mechanisms, the strength of feedback systems, and the extent to which participation is perceived as consequential by citizens themselves.

The Citizens' Guides' weak feedback mechanisms hinder the ability to track how the initiative shapes decision-making. Evidence of empowerment through capacity building for both citizens and local leaders remains anecdotal without proper institutionalization. For such initiatives to be effective, citizens must also have meaningful opportunities to apply the knowledge and skills they acquire during capacity building efforts. That knowledge can be best applied through active participation in decision-making processes, otherwise it risks remaining latent in the absence of institutionalized participatory channels. Irembo.Gov appears to be delivering clear instrumental outcomes, such as improvements in service delivery, efficiency gains and expanded service access. Irembo.Gov has also shown signs of institutional innovation and leadership, particularly through its multi-channel approach: by incorporating kiosks and USSD protocols, it has enabled access for many Rwandans without smartphones or internet connectivity. Through its "Byikorere" (Self-Service) campaign, Irembo also implemented targeted capacity building to strengthen citizens' ability to access and use its services independently. However, concerns over privacy, distrust in online payments, and limited digital skills continue to deter broader adoption.

Overall, Rwanda represents an important “extreme case” for examining e-participation. The country combines relatively advanced e-government performance and strong political commitment to digital transformation with persistent demand-side constraints, hierarchical governance structures, and uneven participatory outcomes. Despite significant progress in digital government, important barriers related to access and affordability of technology remain, particularly for rural and low-income populations. Limited access to smartphones, digital devices and internet connectivity, alongside uneven digital literacy and concerns over data privacy and online payments, continue to constrain citizens’ ability and willingness to engage through digital platforms. This contrast makes the interplay between supply and demand-side drivers particularly visible. The cases demonstrate that strong state capacity and digital infrastructure can support rapid expansion of e-government services, but meaningful e-participation outcomes ultimately depend on whether participation mechanisms are genuinely deliberative, institutionalized, inclusive, and perceived by citizens as capable of influencing policy and service delivery.

Chapter 6: Discussion

This chapter addresses the central puzzle of why e-participation initiatives often fail to translate into meaningful outcomes, focusing on the interplay of drivers within an extreme case study setting. The study makes four key contributions: first, it establishes the centrality of demand-side drivers, by showing that they are as important as supply-side factors in shaping e-participation adoption and outcomes. Second, it reconceptualizes e-participation as a mediated governance process in which outcomes are shaped not by supply and demand-side drivers in isolation, but by their interplay and, more importantly, by how this interplay is mediated, governed, and institutionalized. Third, it demonstrates that adoption does not necessarily translate into meaningful outcomes, and introduces a distinction between instrumental and transformative outcomes. Finally, the insights culminate in the presentation of a revised e-participation framework, which views participation as a relational governance process shaped by a number of pre-conditions (institutional willingness and power dynamics) and the quality of the supply-demand side interface.

6.1 Revisiting the Research Questions and Analytical Framework

The research journey began with a scoping review of the e-participation literature, which revealed a fragmented analytical landscape. Existing scholarship has largely examined e-participation through separate supply-side and demand-side lenses. Supply-side studies primarily focused on institutional capacity, e-government maturity, technological design, and platform availability. Such studies often assume a techno-optimistic view that improved digital infrastructure and government readiness would naturally lead to higher participation. However, scholars have cautioned against technologically deterministic perspectives that overlook institutional and political realities shaping implementation and outcomes (Bekkers & Homburg, 2007). Demand-side studies, by contrast, concentrated on citizens' willingness to engage, trust, digital literacy, and attitudes toward technology, frequently relying on Technology Acceptance Model (TAM)-style approaches centered on perceived usefulness and ease of use (Davis, 1989; Venkatesh et al., 2003).

This fragmentation exposed two important gaps in the literature. First, limited attention has been paid to how supply and demand-side drivers interact in practice. Second, much of the literature implicitly assumed that adoption would naturally produce meaningful outcomes, despite limited empirical evidence to that effect (Fung, 2015). These gaps shaped the analytical direction of the dissertation and motivated the development of a consolidated theoretical framework focused on the interplay between drivers and the conditions under which participation becomes meaningful.

To investigate these questions empirically, the dissertation adopted a mixed-methods design.

The quantitative phase examined longitudinal regional variation in e-participation adoption across Europe between 2010 and 2022. The analysis sought to test whether supply-side indicators, such as e-government performance and governance quality, or demand-side indicators, such as digital skills, institutional trust, civic engagement, and cultural values, better explained adoption patterns over time. The findings showed that demand-side factors were generally stronger and more robust predictors of regional variation in e-participation adoption than supply-side indicators. Digital skills emerged as the most consistent predictor across outcomes and model specifications, while liberal values, institutional trust, and civic engagement also played important, though outcome-dependent, roles. By comparison, the effects of broader e-government performance and governance quality were weaker and less consistent, suggesting that they primarily provide enabling conditions for adoption rather than independently ensuring uptake. These findings also challenged the existing techno-centric assumption in the literature that places a strong emphasis on technological provision through websites and portals (Medaglia, 2012; Susha & Grönlund, 2012; Peixoto & Fox, 2016).

At the same time, the quantitative analysis raised additional questions that could not be answered through statistical analysis alone. In particular, it remained unclear how the interaction between supply and demand-side is mediated in practice, why similar institutional and contextual settings generate different participation adoption patterns, and under what conditions participation translated into meaningful outcomes.

The qualitative analysis addressed these questions through in-depth case studies of the Citizens' Guide to the Budget and Irembo.Gov in Rwanda. Rwanda was selected as an extreme case because it combines relatively advanced e-government performance and strong political commitment to digital transformation with weaker demand-side conditions, including uneven digital literacy, limited internet access, and hierarchical governance traditions. This contrast made the interaction between supply and demand-side drivers particularly visible and analytically insightful.

As the case studies peeled back the layers behind the interaction of supply and demand-side drivers, it became clear that beyond technological factors, demand-side drivers reflecting broader social and cultural contexts strongly shape the adoption and use of e-participation initiatives. Addressing these barriers is not as straightforward as expanding telecommunications infrastructure or improving access to digital devices. While the findings demonstrate that technology can support more responsive and inclusive forms of participation, this potential is only realized when backed by sustained engagement, institutional responsiveness, and strong feedback mechanisms that genuinely value citizen input.

The study reveals that adoption does not necessarily generate meaningful outcomes. In contexts such as the Citizens' Guide to the Budget, mandatory participation may generate high levels of formal participation, yet the largely non-deliberative and tokenistic nature of the process ultimately limits the potential for meaningful engagement and influence. The case studies demonstrated that

participation outcomes are shaped by how the interaction between citizens and institutions is governed, mediated, and institutionalized. Across both cases, participation was operationalized through citizen input processes, feedback mechanisms, capacity building efforts, and in the Citizens' Guide to the Budget case by intermediary actors such as civil society organizations. However, the quality of these mediating processes differed substantially between the two initiatives, leading to different participation trajectories and outcomes.

The empirical analysis of the Citizens' Guide to the Budget revealed that participation can remain procedural and symbolic despite the existence of formal participatory structures. In this case, participation was mediated through traditional hierarchical practices (Home-grown solutions). These practices are characterized by weak feedback systems, and limited institutional responsiveness, reinforcing a persistent participation–impact gap. The governance process was similarly tokenistic, as existing power dynamics between central and local government prioritized upward accountability and implementation oversight over citizens' engagement. Participation therefore functioned more as a mechanism for monitoring implementation of centrally defined priorities at the local level, than as a meaningful process for co-creating budgetary decisions.

By contrast, Irembo.Gov illustrated how stronger responsiveness, adaptation, and feedback integration can improve adoption and generate clearer instrumental outcomes. The organizational structure allowed for a more adaptive governance model under Iremobo's centralized public–private partnership (PPP) framework. Irembo had a clear mandate and objectives, and operated under well defined accountability structures, with stronger incentives to respond to user feedback and improve service delivery. What distinguishes Irembo is the mindset shift towards a more citizen-centric and co-creation approach to service delivery. After recognizing that adoption rates would not improve simply by expecting users to adapt to the platform, Irembo increasingly sought to tailor services to citizens' needs and constraints.

Taken together, the findings help reshape how e-participation is conceptualized. The dissertation demonstrates that e-participation is best understood as a mediated governance process shaped by a number of pre-conditions and the mediation quality of the supply-demand-side interface (Ansell & Gash, 2008; Emerson et al., 2012; Peixoto & Fox, 2016). Meaningful participation outcomes depend not simply on whether platforms exist or citizens participate, but on whether participation mechanisms are inclusive, responsive, institutionalized, and capable of influencing governance processes in practice.

Against this background, the discussion chapter synthesizes the findings across the quantitative and qualitative phases to answer the three research questions guiding the dissertation:

- RQ1: What are the key supply and demand-side drivers influencing e-participation?
- RQ2: How does the interplay of e-participation drivers influence e-participation adoption?

- RQ3: What drives meaningful e-participation outcomes in policy formulation and service delivery?

6.2 Synthesis of Key Findings

The study makes four principal contributions to the e-participation literature.

First, it demonstrates that demand-side drivers are not secondary, but central to e-participation. Across both the European longitudinal analysis and the Rwanda case studies, factors such as digital skills, cultural norms, trust and civic engagement explain variation in adoption more strongly than supply-side indicators alone. These findings challenge the predominantly supply-driven and techno-centric orientation of the literature by emphasizing the important role of demand-side drivers and institutional factors.

Second, the study reconceptualizes e-participation as a mediated governance process in which outcomes are shaped not by supply and demand-side drivers in isolation, but by their interplay and, more importantly, by how this interplay is mediated, governed, and institutionalized. The findings therefore place particular emphasis on the quality of the supply–demand interface as the critical intersection where providers and users meet and interact, and where e-participation processes are operationalized and experienced in practice. The Rwanda case studies demonstrate that the interplay between government provision and citizen engagement is channeled through concrete mechanisms such as citizen input channels, and capacity building efforts.

Third, the study contributes to the literature by demonstrating that adoption alone does not necessarily generate meaningful participation outcomes. The study introduces a distinction between instrumental outcomes (e.g., efficiency gains, improved service delivery, access and transparency) and transformative outcomes (e.g., empowerment, institutionalized voice, citizen agency). The findings further suggest that the underlying governance arrangements for each initiative play an important role in determining whether participation becomes meaningful or remains largely procedural. In doing so, the study extends collaborative governance and co-production approaches by highlighting how institutional willingness, power dynamics and the quality of mediation shape e-participation dynamics and outcomes.

Finally, these insights contribute to the development of an E-participation Framework for Meaningful Outcomes, which reconceptualizes participation as the mediated interplay of supply and demand-side drivers. The framework posits that outcomes are contingent upon the existence of pre-conditional factors, such as institutional willingness and power dynamics, and the mediation quality of the supply–demand side interface where these drivers intersect. By synthesizing evidence from the longitudinal European analysis and Rwandan case studies, the framework demonstrates that meaningful outcomes depend not merely on whether e-participation is adopted, but on how the interplay is governed, facilitated, and institutionalized.

6.2.1 Re-examining Supply-Side and Demand Drivers in influencing E-Participation (RQ 1)

This dissertation's empirical results find that demand-side drivers are not secondary but central to explaining e-participation adoption. Beyond technology, demand-side drivers reflecting broader social and cultural contexts (e.g., digital literacy, cultural values, trust and civic engagement) strongly shape the adoption and meaningful outcomes of e-participation initiatives.

Across the Rwanda case studies, interviews and documentary evidence shows that participation is shaped more by trust in government, trust in technology, digital literacy, and prevailing cultural norms around voice and authority than by the mere existence of platforms. These findings also hold when platforms are well designed and supported by strong institutional factors, as is the case with Irembo. The findings align with scholarship emphasizing that in many developing contexts adoption depends less on access and more on credibility and confidence (Heeks, 2008; Gigler & Bailur, 2014; van Dijk, 2019).

This finding displays a similar pattern as in Europe: demand-side variables explain regional variation more strongly than supply-side indicators. Chapter 3 which discusses the longitudinal European analysis suggests that demand-side factors, particularly digital skills, civic engagement behaviors, and cultural values, play a more prominent role in explaining variation in e-participation adoption over time, while supply-side indicators account for differences across regions to a lesser degree. By contrast, supply-side indicators accounted for regional differences less consistently. Broader measures of national e-government performance may capture important differences in the enabling environment across countries, but they did not emerge as significant direct predictors of regional adoption.

The European analysis further shows that governance quality and e-governance performance help explain why some countries institutionalize e-participation more broadly, but it is not a strong predictor of regional variation in digital government use, especially for transactional e-services. This is in line with findings from European e-participation literature which shows that broader institutional context matters, however it is the organizational arrangements, leadership and political commitment underlying the specific e-participation initiatives that are key success factors (Randma-Liiv & Vooglaid, 2019; Panopoulou et al., 2014; Toots, 2019). Drawing lessons from the literature analysing European e-participation cases such as *Decide Madrid*, Scotland's, *We asked, you said, we did* and others, demonstrate that leadership, organizational arrangements and professional project management are essential components for success. Especially on occasions where e-participation platforms function in a less institutionalized environment. Another finding that aligns well with the Rwandan context is the importance of change agents from within the organization.

Another important set of findings emerge from the role of culture. The study highlights that while cultural factors are important in explaining adoption, they are complex, nuanced and depend on how such factors interact with governance arrangements. For example, the findings further indicate that culture shapes citizens' willingness to engage. In Rwanda, the cases demonstrate how prevailing cultural norms, including deference to authority, collectivist traditions, and structured forms of participation, can constrain bottom-up engagement even where supply-side infrastructure is relatively strong (Randma-Liiv & Vooglaid, 2019). In the Rwanda context, this comes on the heels of mandatory participation, as participation is often understood as a collective obligation rather than an individual deliberative exercise, reinforcing more hierarchical and one-directional forms of engagement. Yet, the findings also indicate that technology can mediate and, in some cases, partially reshape these dynamics. In the case of Irembo, digital channels and social media may create alternative participation spaces that are perceived as more accessible and responsive, especially among younger users (Vicente & Novo, 2014). This suggests that technology may also influence how participation is experienced, mediated, and negotiated in practice.

Lastly, the findings indicate that willingness to use is a multi-dimensional and context-sensitive concept. A key contribution of the case evidence is that willingness to use cannot be treated as a static intention variable predicted primarily by usefulness/ease of use. Instead, it emerges as a context-dependent construct shaped by a multitude of constraints and motivations, such as trust, culture and others. In the Citizens' Guide to the Budget case study, citizens' willingness is constrained by limited budget literacy and procedural knowledge, low confidence to engage, inclusion barriers, and doubts about whether input leads to influence, alongside trust considerations. In the Irembo case study, willingness is shaped by a different mix of factors, more heavily driven by digital skills gaps and trust in technology, with cultural preferences playing a secondary but still meaningful role in how citizens navigate official channels.

6.2.2 Interplay of Supply and Demand-side Drivers (RQ 2)

The second research question examines how the interplay between supply and demand-side drivers is mediated, governed and institutionalized, and how these interactions shape e-participation adoption. At the onset of the question, in the Rwanda case studies, the empirical analysis shows that the interaction of drivers is determined by a low-supply, low-demand equilibrium, where constraints within both perspectives limit adoption. Despite these challenges, the findings also reveal encouraging trends that demonstrate how the quality of mediation at the supply–demand interface can shape participation adoption and lead to meaningful outcomes.

Distilling the lessons from the empirical analysis, the dissertation contributes to the literature by conceptualizing e-participation as a mediated governance process in which the interaction between supply and demand-side drivers occurs through specific practices, most notably citizen input mechanisms and capacity building activities. These practices are the primary points at which

supply-side provision and demand-side readiness intersect, constituting the principal supply-demand side interface.

The empirical analysis demonstrates that e-participation initiatives can produce markedly different outcomes depending on how they are mediated and governed in practice. The Rwanda findings provide a good example of two e-participation initiatives that function within the same contextual environment yet yield different results. The Citizens' Guide relies primarily on traditional participatory structures and operates within a fragmented network of stakeholders characterized by weak ownership and accountability. Irembo.Gov, on the other hand, is mediated largely through digital channels and benefits from a more centralized public–private partnership (PPP) model with clearer mandates, stronger incentives, and more streamlined coordination. While no single "optimal" model exists, because each e-participation initiative is unique in its own way, the findings suggest that institutional arrangements with more streamlined coordination mechanisms and clear responsibilities among stakeholders may be better positioned to adapt to citizen needs and sustain participation over time. The literature further emphasizes that e-participation systems create significant coordination and administrative challenges because they involve multiple actors, institutional layers, and governance processes (Randma-Liiv & Vooglaid, 2019).

In both cases, supply-demand interplay occurs through citizen input and capacity building mechanisms. The cases demonstrate that the citizen input mechanisms and capacity building efforts are as effective as the governance process that supports them. Citizen input mechanisms are most effective when they are inclusive, deliberative and embedded within strong feedback loops, effective dissemination practices, and offer meaningful opportunities for citizens to influence policy and decision-making processes. Similarly, capacity building efforts are most effective when they enable citizens to apply their knowledge and acquire skills in practice. Together, these factors shape the quality of the supply–demand interface.

These findings align with co-production and collaborative governance scholarship, which increasingly conceptualizes e-participation as an interactive governance process rather than a purely technological intervention (Ansell & Gash, 2008; Bovaird, 2007; Sørensen & Torfing, 2016). Similarly, research emphasizes that the effectiveness of e-participation depends on how participation is organized, managed, and embedded within administrative processes, including coordination mechanisms, institutional incentives, and the integration of citizen input into decision-making structures (Randma-Liiv & Vooglaid, 2019). Royo, Pina, and García-Rayado (2020), for example, show that even highly advanced digital participation platforms may struggle to sustain engagement when responsiveness and feedback mechanisms are weak.

6.2.2.1 Mediated interplay

The two Rwanda case studies are mediated differently which determines how citizen input mechanisms and capacity building efforts are designed and operationalized. The Citizens' Guide uses traditional participatory practices to engage with citizens, while Irembo relies on digital

channels. These different approaches shape how supply and demand-side drivers interact to influence adoption within each case study.

In the case of the Citizens' Guide to the Budget, participation is mediated using traditional community gatherings called Home-Grown Solutions (HGS). These participatory practices are embedded within Rwanda's decentralized governance system and are implemented through a multi-layered structure involving central government institutions, local authorities, and intermediary actors such as civil society organizations. While these provide a formal channel for participation, they reinforce hierarchical norms and a culture of deference to authority (Hofstede et al., 2010). Here citizens are required to participate alongside the entire community, so one can argue that adoption is full but the way the interaction is governed discourages genuine participation and remains purely tokenistic. Citizens frequently remain passive recipients of information rather than active contributors and decision-makers. Moreover, respondents highlighted that youth, and minority groups often do not perceive these spaces as genuinely inclusive.

And while some of HGS practices (specifically Imihigo contracts) are frequently accredited as being instrumental in helping Rwanda make progress towards achieving the Millennium Development Goals, particularly in the area of health, they appear to be much less suited to fostering deliberative, inclusive and genuine e-participation (Hasselskog, 2017). Hasselskog (2017) argues that the governance logic underpinning HGS emphasizes consensus, discipline, and performance delivery, which can constrain more pluralistic forms of participation where citizens openly challenge priorities, express dissenting views, or shape agendas from the bottom up.

These findings suggest that participation mechanisms can generate formal participation without fostering substantive engagement. In this case, the interaction between government and citizens remains largely top-down and informational, limiting opportunities for deliberation and co-production. The findings therefore reinforce broader critiques in the e-participation literature that participation mechanisms may become tokenistic when institutional structures do not genuinely redistribute influence or incorporate citizen input into decision-making processes. The literature cautions about tokenistic initiatives or "democracy-washing" that could leave citizens disengaged (Mariani et al., 2024).

By contrast, the Irembo.Gov case demonstrates a more adaptive evolution in the governance of participation. Initially, the platform relied heavily on a techno-centric approach that emphasized technological sophistication and digitization of services, while paying comparatively limited attention to citizen readiness, digital skills, or user preferences. Early adoption remained relatively low despite significant investments in technological infrastructure and related process reengineering efforts. However, institutional actors gradually recognized that technological provision alone was insufficient to generate uptake. Over time, the platform became more responsive to demand-side barriers. Institutional adjustments included the expansion of service

delivery channels to accommodate users without access to digital technology, increased reliance on social media communication, and efforts to simplify user interaction.

An important factor shaping Irembo's case is its governance structure as a public–private partnership (PPP). The PPP model appears to strengthen implementation capacity, operational flexibility, and accountability through clearer performance expectations, service-level agreements, and user-oriented incentives. Because the platform's sustainability depends partly on uptake and user satisfaction, Irembo has stronger incentives to monitor performance, respond to complaints, and improve the user experience. This helps explain why feedback mechanisms are more visible and why the platform has been able to adapt over time. However, while the PPP model supports efficiency and service accountability, its contribution to deeper participatory governance remains more limited. One area for improvement identified during the interview process was the need for Irembo to involve users more systematically in the early stages of service design and platform development.

These findings resonate with existing scholarship emphasizing that while more extensive use of digital technologies could improve transparency of participatory institutions, technological sophistication alone does not ensure effective e-participation. Royo et al. (2020), for example, demonstrate that even highly advanced digital participation platforms require sustained institutional responsiveness and active engagement to generate meaningful outcomes. Similarly, Randma-Liiv and Vooglaid (2019) emphasize that organizational arrangements and administrative practices are central to the effectiveness of e-participation systems.

6.2.2.2 Citizen input mechanisms

The effectiveness of e-participation is critically shaped by how citizen input is managed, including the quality of feedback loops, institutional responsiveness, and the extent to which citizen input is integrated into governance and decision-making processes (Medaglia, 2012). Hoppe (2011) also underscores that dissemination is one of key outputs of a participatory process, where poor dissemination compromises accountability to the public.

In the Citizens' Guide to the Budget, weak feedback mechanisms significantly undermine participation. The absence of clear, documented evidence of how citizen input influences budgetary decisions contributes to a persistent participation–impact gap, reinforcing perceptions that participation is symbolic and tokenistic rather than meaningful. This, in turn, erodes trust and discourages engagement. In the case of the Citizens' Guide to the Budget, technical flaws in the MEIS system, coupled with organizational and human resource gaps, limit effective feedback loops. The government reliance on HGS, means that citizen input is primarily collected through verbal channels. These are ill-suited to foster deliberative engagement and perpetuate hierarchical structures that do little to meaningfully engage citizens.

In the case of Irembo.Gov, it could be argued that the government is betting on a long-term plan for the adoption of e-participation. Initially, the emphasis was heavily placed on the technological aspects of building the platforms and digitizing services. Collaborative approaches were not employed, there were no consultations with users or co-production in design. Low uptake of the self-service option, however, pushed the platform to become more innovative and responsive, incorporating citizen feedback to improve usability and address barriers such as limited digital skills and access. Especially effective, has been the use of X (formerly Twitter), as a two-way interaction platform where citizens can raise concerns about the platform and receive a response from Irembo within a short timeframe.

6.2.2.3 Capacity Building and Citizen Readiness

The findings further demonstrate that capacity building efforts constitute an important mechanism where government and citizens engage. Across both case studies, participation depended not only on the availability of digital platforms, but also heavily on citizens' ability to understand, access, and effectively use participatory mechanisms. In this regard, the effectiveness of capacity building mechanisms depends not only on the delivery of training or information, but also on the extent to which capacity building targets citizens' needs and provides them with meaningful opportunities to apply their knowledge and skills in practice.

In the Citizens' Guide to the Budget, capacity building efforts focused primarily on civic education, awareness raising, and budget literacy. These activities sought to improve citizens' understanding of participatory processes and public budgeting systems, particularly at the local level. While citizens participated in training, opportunities to apply this knowledge through genuinely deliberative and influential participatory mechanisms remained limited. Capacity building efforts therefore need to be accompanied by participatory processes that enable citizens to meaningfully engage and contribute through quality input. As Rowe and Frewer (2005) and Macintosh (2004) argue, citizen input characterized by relevance, representativeness, and deliberative quality is more likely to influence policymaking. In the Rwanda case, however, the multiple challenges characterizing the Citizens' Guide to the Budget constrained the broader impact of these efforts. Furthermore, many trainings were conducted by civil society organizations, often in partnership with international organizations, raising questions about sustainability and long-term institutional ownership

In the case of Irembo.Gov, capacity building efforts evolved to more directly target low adoption rates and user constraints. Institutional actors increasingly recognized that complementary efforts to address digital skills gaps, user confidence, and accessibility barriers were needed to spur uptake. This resulted in greater emphasis on user support mechanisms, awareness campaigns (Byikorere), assisted service delivery through agents, and simplified user interfaces. The findings therefore suggest that capacity building was initially reactive to counter low adoption numbers. As

Irembo matures, capacity building is recognized as an integral part of Irembo's effort to capacitate citizens on how to use Irembo services.

6.2.2.4 Role of Intermediaries and the Participation Ecosystem

The findings further highlight the critical role of intermediaries, particularly civil society organizations (CSOs), in mediating the interaction between citizens and government. This is especially salient in developing-country contexts characterized by uneven digital literacy and variable levels of institutional trust (Heeks, 2002; Gigler & Bailur, 2014; Peixoto & Fox, 2016).

In Rwanda, CSOs play a key role in facilitating participation within HGS processes, including providing training on civil rights and budget literacy. As trusted actors, they help bridge gaps in capacity and confidence. At the same time, the role of CSOs within the broader participation cycle is well established. They serve as intermediaries between central government and citizens, as well as between local government and citizens, and in practice often also facilitate coordination between central and local government actors. CSOs have worked to shift perceptions among local government leaders about the uses and benefits of participation while also building citizen capacity and encouraging more participatory attitudes among citizens. However, CSOs also face important constraints. There is a large reliance on CSOs to sustain participation processes, yet they often lack access to systems used to document citizen priorities (MEIS), and have limited resources to systematically document citizen input or disseminate feedback effectively. In addition, many CSOs rely heavily on funding from international partners, raising concerns about their long-term sustainability.

6.2.3 Meaningful Outcomes of E-Participation (RQ 3)

Much of the e-participation literature focuses primarily on adoption, and participation levels, often implicitly assuming that increased engagement will generate meaningful outcomes. Comparatively less attention is devoted to examining whether participation meaningfully influences decision-making processes or produces substantive institutional and policy outcomes (Medaglia, 2012; Macintosh, 2004; Fung, 2015). Steinbach, Sieweke, and Süß (2019), in their systematic review of the e-participation literature, categorize research into several analytical strands, including adoption, implementation, diffusion, and evaluation. Their review shows that adoption-focused studies dominate the field, while diffusion and evaluation-oriented research remain comparatively limited.

To address this gap, this study takes the analysis beyond adoption to examine the conditions under which meaningful participation outcomes emerge, distinguishing between instrumental and transformative outcomes. Instrumental outcomes refer to practical improvements such as efficiency gains, reduced costs, expanded access, better service delivery, and lower corruption risks. Transformative outcomes refer to deeper changes in governance, including citizen

empowerment, institutionalized voice, stronger accountability, and the integration of citizen input into decision-making.

The findings show that adoption alone does not automatically generate meaningful participation outcomes. Outcomes depend on how participation is governed, mediated and whether institutions are willing and able to respond to citizen input, redistribute influence, and integrate participation into decision-making processes. The contrast between the Citizens' Guide and Irembo.Gov demonstrates that high levels of participation are insufficient conditions for meaningful outcomes.

In the case of the Citizens' Guide to the Budget, meaningful outcomes remain limited. The initiative contributes to awareness-raising, civil rights and budget literacy among citizens and local leaders. However, these gains remain largely anecdotal and difficult to measure because of weak reporting practices and weak feedback loops. As discussed earlier, the Citizens' Guide is mediated through existing cultural and participatory practices that are largely mandatory in nature. As a result, participation rates may appear as high, as citizens are expected to attend community meetings and engage in activities. However, broad participation in terms of adoption does not necessarily translate into meaningful influence over decisions. This creates a persistent participation–impact gap, where citizens are mandated to participate but their input is neither seriously considered nor easily voiced (Hofstede et al., 2010).

By contrast, Irembo.Gov demonstrates clearer instrumental outcomes. While adoption of the self-service module is still far from high, the platform has improved service delivery by reducing administrative costs, limiting opportunities for petty corruption, expanding access through kiosks and USSD, and making services more transparent and convenient. Its multi-channel model has helped reach citizens who lack smartphones, internet access, or digital skills.

More importantly, Irembo provides evidence of some transformative outcomes. Although the platform was not originally designed as a participatory mechanism, its evolution toward a more citizen-centric service model demonstrates how citizen input can become institutionalized within governance processes. Through systematic collection of user feedback and the redesign of services and service delivery models in response to citizens' needs, the platform has become increasingly inclusive, adaptive and innovative. In this respect, Irembo illustrates how institutional willingness can lay the groundwork for more transformative outcomes by creating space for citizens' influence, strengthening institutional learning and effectiveness.

To determine whether e-participation initiatives are likely to evolve into meaningful forms of engagement or are effectively doomed to remain largely procedural from the outset, the study identifies a set of pre-conditions.

The first pre-condition is institutional willingness. Institutional willingness refers to the extent to which public institutions are prepared to take citizen input seriously, adapt processes in response

to feedback, emphasize inclusion, and close the participation loop. Where institutional willingness is weak, as in the Citizens' Guide, participation risks becoming symbolic. Where it is stronger, as in Irembo, e-participation is more likely to generate tangible improvements. The contrast between the Citizens' Guide and Irembo illustrates how differences in institutional willingness can significantly influence the depth of participation outcomes.

The second pre-condition relates to existing power dynamics referring to asymmetries in agenda-setting authority, control over participation processes, access to information, and the ability to influence decisions. In the Citizens' Guide to the Budget, these power asymmetries remained rigid and more pronounced, with participation processes largely defined and controlled by central institutions, while dynamics between central and local government actors further constrained meaningful engagement. Although citizens were formally included in participatory processes, their role often remained limited to validating predefined priorities rather than shaping them directly. Existing participatory structures (HGS) continued to emphasize compliance, collective obligation, and obedience to authority over deliberative engagement and bottom-up influence, thereby limiting opportunities for citizens to meaningfully influence decision-making processes.

By contrast, while decision-making authority within Irembo.Gov also remained concentrated within institutional actors, the platform operated under a markedly different set of organizational arrangements and incentives. As a PPP, Irembo was established with a clear objective: increasing the adoption and use of digital services. When Irembo's original top-down approach fell short of expectations, the platform was compelled to reassess its outreach and approach. The low adoption numbers ultimately created strong incentives to understand user needs, reduce barriers to uptake, and continuously improve the user experience. Rather than continuing to expect citizens to adapt to the original service delivery models, Irembo increasingly adapted its services and delivery channels to the needs and constraints of users. This shift fostered a more citizen-centric approach to governance, supported by feedback mechanisms, customer support systems, and continuous service redesign.

And while, this mindset shift did not fundamentally redistribute decision-making authority, it did influence service design and delivery improvements, by creating an important space within the e-participation process. That space actively sought to understand citizen experiences and feedback and shaped administrative practices and service delivery decisions. This suggests that meaningful outcomes could emerge when governance arrangements create meaningful spaces through which citizen engagement can influence institutional behavior, learning, and adaptation.

6.3 Revisited E-participation Framework for Meaningful Outcomes

To incorporate a more nuanced understanding of e-participation, and to account for the elements identified in Sections 6.1 and 6.2, the theoretical framework discussed in Section 2.4 and Section

3.1 (Figure 9) is re-envisioned by presenting e-participation as a mediated governance process shaped by pre-conditions (institutional willingness and power dynamics) and the quality of citizen–government interaction.

A novel component of the framework is its departure from the dominant focus on participation adoption towards meaningful outcomes. Rather than treating adoption as an end in itself, the framework emphasizes the conditions under which participation translates into meaningful outcomes. The findings suggest that such outcomes are more likely to emerge when governance arrangements redistribute influence, strengthen transparency and responsiveness, and create genuine opportunities for citizens to shape priorities and decisions. These conditions can foster trust and create a more enabling environment for citizen engagement.

At its foundation lies a pre-conditional layer of institutional willingness and power dynamics, reflecting the willingness of governments to engage citizens and the voice, agency, and influence that citizens are able to exercise within participatory processes (Fung, 2015). While much of the existing literature focuses on the willingness or motivation of citizens to participate, considerably less attention has been given to the institutional willingness of governments to genuinely engage with citizens and incorporate citizen input into governance processes. The findings of this research suggest that government motivations, whether participation is pursued as a genuine governance practice or rather as a symbolic or tokenistic exercise, represent a critical driver shaping adoption and outcomes. Additionally, power dynamics shape asymmetries in agenda-setting authority, control over participation rules, access to information, and the ability to determine whether citizen input influences decisions. These asymmetries shape not only who participates, but also whose participation becomes consequential. Even where digital platforms expand opportunities for engagement, institutional actors often retain control over how participation is structured, interpreted, and embedded into decision-making processes (Arnstein, 1969; Gaventa, 2006; Fung, 2015).

Building on this foundational layer, the framework incorporates supply-side and demand-side drivers. Supply-side drivers relate to the organizational and technological conditions specific to each participation initiative, including e-government performance, organizational arrangements, leadership and institutional capacity. Demand-side drivers reflect citizens' capacity and willingness to engage, including digital skills, cultural values and trust in both government and technology. These two sets of drivers converge at the supply-demand side interface, where participation is operationalized and experienced by users in practice. The interaction between these drivers is shaped by the way participation mechanisms are mediated and governed.

At this interface, the interplay between supply and demand drivers occurs through mechanisms such as citizen input and capacity building. The effectiveness of these mechanisms is shaped by the quality of the mediation and governance processes. Specifically, when citizen input is inclusive, deliberative and functions within strong feedback loops and dissemination channels,

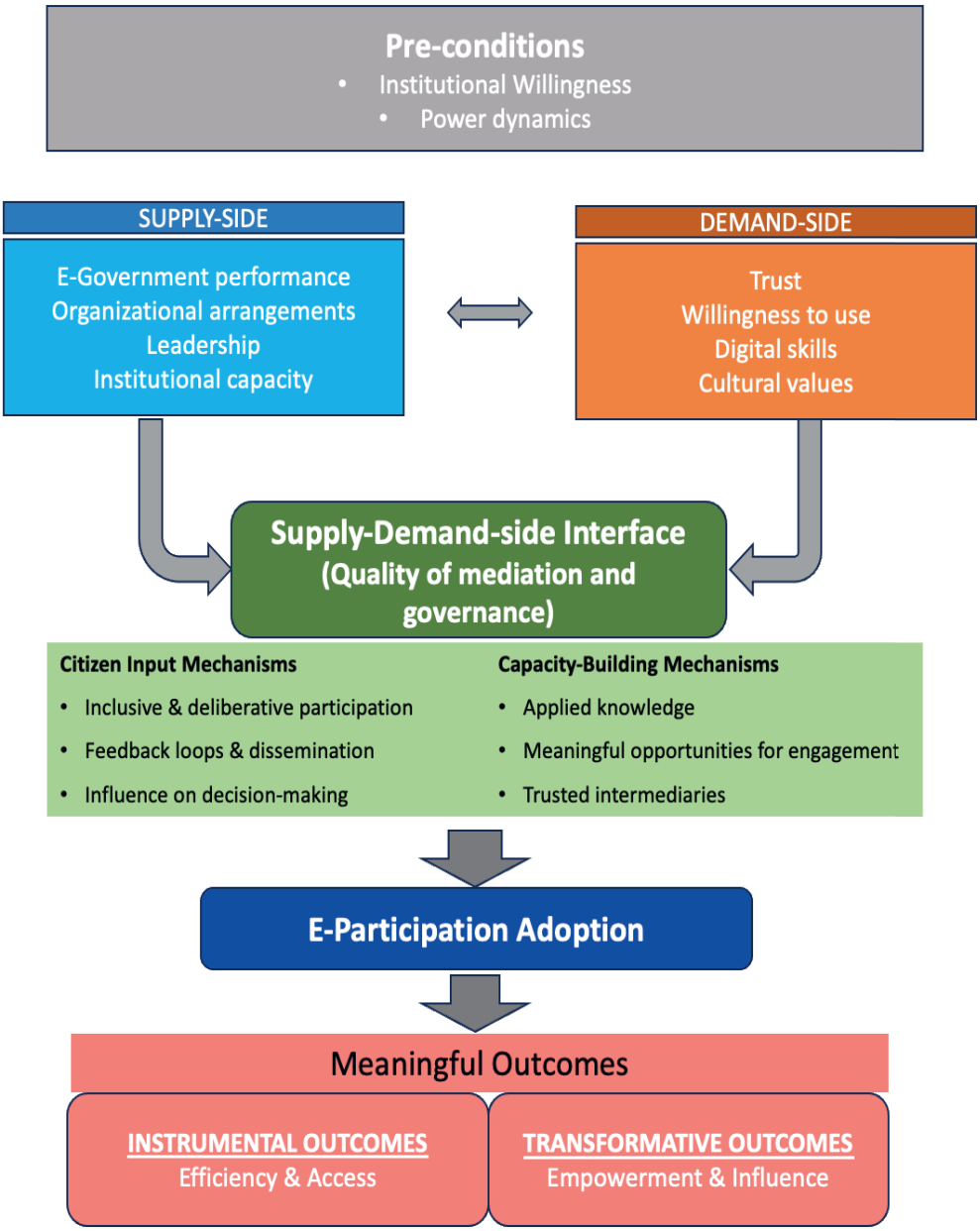
influencing policy and decision-making, it is more likely to be adopted and generate meaningful outcomes. Furthermore, capacity building activities help address demand-side constraints by strengthening citizens' and government actors' understanding of digital systems, participatory processes, and substantive policy issues. The findings further suggest that capacity building is most effective when knowledge generated through these activities can be applied in practice through meaningful opportunities for engagement. Otherwise, acquired knowledge and skills risk remaining dormant and lost. In many contexts, trusted agents and stakeholders, including third-party actors such as civil society organizations, also play an important role in facilitating these processes and bridging gaps between institutions and citizens.

When it comes to the revised framework, in addition to traditional TOE and TAMs elements, the framework draws on broader collaborative governance approaches. It aligns with the input–throughput–output legitimacy model (Schmidt, 2013), particularly by emphasizing the importance of throughput, or the quality of governance processes. It further complements organizational perspectives on e-participation (Randma-Liiv & Vooglaid, 2019), which highlight the role of administrative arrangements and institutional embedding, while extending them to integrate demand-side drivers such as trust, culture, and citizen capacity.

Against this background, the framework advances the literature by positioning e-participation as a relational and mediated governance process. It highlights that participation outcomes are contingent on two interrelated dimensions: (i) foundational pre-conditions, including institutional willingness and underlying power dynamics, and (ii) the quality of how the citizen–government interface is mediated and governed.

This perspective shifts the analytical focus away from examining supply and demand-side drivers in isolation toward their alignment, interaction, and institutionalization. It shows that meaningful outcomes do not arise from technological provision or citizen readiness alone, but from how these elements are connected through inclusive processes, effective feedback mechanisms, and sustained institutional engagement. In doing so, the framework provides a more integrated and outcome-oriented lens for understanding e-participation, while offering a broader blueprint for the conditions under which e-participation initiatives are more likely to generate meaningful outcomes across different institutional settings. The framework is therefore applicable across a wide range of e-participation initiatives.

Figure 9: Revised E-Participation Framework for Meaningful Outcomes



Source: Author's deliberations

Chapter 7: Conclusions

> *"E-participation is using technology to involve citizens in governance which is far from where Rwanda is at the current stage of our digital transformation journey... Citizens have to have a say in their cultural policy and social wellbeing... It's important because while we policymakers think we are smart and know everything, that is not true. We need to be in-sync with what people think, want, and expect." (Interview with former senior policymaker, MINICT)*

This dissertation set out to address a central puzzle in the e-participation literature: why the proliferation of digital participation initiatives has not translated into widespread adoption or meaningful outcomes in practice. While governments around the world have invested heavily in digital platforms, online consultations, and e-government systems, evidence of sustained citizen engagement and meaningful influence on policymaking and service delivery remains uneven and limited.

The literature has traditionally approached this puzzle through fragmented analytical lenses. Much of the research has either focused on supply-side drivers, such as platform design, institutional capacity, and e-government performance, or on demand-side drivers, albeit to a lesser extent, including trust, digital skills, willingness to participate, and cultural attitudes.

This fragmentation is counter to the very essence of participation which is intended as a deliberative process that brings citizens and government together to co-create policy and improve service delivery efficiency. The fragmentation also revealed two important gaps in the literature. First, limited attention has been paid to how supply and demand-side drivers interact in practice to influence adoption and meaningful outcomes. Second, much of the literature implicitly assumed that adoption would naturally produce meaningful outcomes, despite limited empirical evidence demonstrating whether citizen participation actually influenced policymaking or service delivery (Fung, 2015). These gaps shaped the analytical direction of the dissertation and motivated the development of a consolidated theoretical framework focused on the interplay between drivers and the conditions under which participation becomes meaningful.

The study was guided by three interrelated research questions concerning the key supply and demand-side drivers, their interplay, and the conditions under that interplay influence e-participation adoption and outcomes.

- RQ1: What are the key supply and demand-side drivers influencing e-participation?
- RQ2: How does the interplay of e-participation drivers influence e-participation adoption?
- RQ3: What drives meaningful e-participation outcomes in policy formulation and service delivery?

The study makes four key contributions. First, it establishes the centrality of demand-side drivers, by showing that they are as important as supply-side factors in shaping e-participation adoption and outcomes. Second, it conceptualizes e-participation as the mediated interplay of supply and demand-side drivers, where outcomes are not determined by the drivers themselves, but by how their interaction is mediated, governed, and institutionalized. Third, it demonstrates that adoption does not necessarily translate into meaningful outcomes, and introduces a distinction between instrumental and transformative outcomes. Finally, the insights culminate in the presentation of a Revised E-participation Framework for Meaningful Outcomes, that views participation as a relational governance process shaped by a number of pre-conditions (institutional willingness and power dynamics) and the mediation quality of the supply-demand side interface.

7.1 Empirical Strategy

The empirical strategy combined a longitudinal quantitative analysis of e-participation adoption across European regions with in-depth qualitative case studies in Rwanda. This mixed-methods approach addressed several gaps in the literature. First, the quantitative component responded to the dominance of cross-sectional studies in developed-country research and the limited attention given to changes in adoption patterns over time. Second, Rwanda was selected as an extreme case because it combines relatively advanced e-government performance and strong political commitment to digital transformation with weaker demand-side conditions, including uneven digital literacy, limited internet access, and hierarchical governance traditions. This contrast made the interaction between supply and demand-side drivers particularly visible and analytically insightful. The qualitative analysis included two in-depth case studies of two e-participation initiatives in Rwanda, the Citizens' Guide to the Budget (an open budget initiative) and Irembo.Gov (Rwanda's e-services platform).

Taken together, the methods enabled a more nuanced understanding of how e-participation drivers interact within different institutional and governance contexts. Rather than identifying drivers in isolation, the study examined how the interaction between supply-side and demand-side conditions shapes adoption and the emergence of meaningful participation outcomes.

7.2 Quantitative Findings

The longitudinal analysis of European regions (2010–2022) demonstrated that demand-side factors are the most consistent and robust predictors of e-participation adoption. While much of the existing literature assumes that the availability of digital platforms automatically translates into participation, the findings show that citizen readiness, digital capacity, and socio-cultural conditions are more decisive in explaining variation in adoption levels.

Internet use emerged as the strongest and most consistent predictor across all models, confirming that digital access and usage remain foundational enabling conditions for participation. Trust in government was positively associated with broader forms of e-participation, although its effect

weakened in more transactional forms of engagement (submitting official forms). Petition signing displayed a differentiated pattern, positively associated with broader participation but negatively associated with transactional forms of engagement (submitting official forms) suggesting that expressive and administrative forms of engagement may function differently. This indicates a dual role for petitioning, where it acts as a complementary activity for general digital engagement while functioning as a substitute for deeper, transactional e-government use. This nuanced relationship underscores that citizens may view institutional digital channels and expressive civic acts as alternative pathways rather than a unified progression of engagement.

Additionally, liberal values became more significant in more institutionalized forms of participation, suggesting that cultural orientations toward individual autonomy and openness facilitate deeper digital interactions with government institutions.

By contrast, supply-side indicators produced less consistent results. National e-government performance did not emerge as a significant direct predictor of regional adoption, while governance quality was positively associated with interactive e-participation in some models but was not consistently significant across outcomes and specifications. These findings should not be interpreted as evidence that supply-side factors are unimportant. Rather, the combined quantitative and qualitative evidence suggests that broad institutional and technological provision creates an enabling environment, while its translation into adoption depends partly on how specific initiatives are organized, mediated and embedded within governance processes. The dissertation therefore indicates that broader supply-side conditions are generally less direct and consistent predictors of adoption than citizens' demand-side capabilities and orientations.

The cluster and longitudinal analyses indicate that supply-side readiness may become most visible during periods of institutional stress or rapid shifts in demand, such as during the COVID-19 pandemic. Although countries across all clusters experienced increases in digital engagement during 2020, only some were able to sustain this momentum over time. Low-performers showed weaker continuity in adoption growth, pointing to possible limitations in institutional adaptability, interoperability, coordination capacity, and the overall resilience of digital public service ecosystems. In this sense, supply-side factors appear to shape not only the existence of digital services, but also the capacity of institutions to scale, integrate, and sustain digital participation under changing conditions.

7.3 Qualitative Findings

The analysis of the Citizens' Guide to the Budget and Irembo.Gov demonstrated that e-participation adoption does not emerge from individual drivers operating in isolation, but through a mediated governance process shaped by the interaction between institutional provision and citizen engagement. The cases underscored the central importance of the supply–demand interface, particularly the mechanisms through which governments and citizens engage, deliberate, and exchange information. Across both initiatives, citizen input channels and capacity building efforts

emerged as the primary points of interaction through which supply and demand-side drivers converged. However, the effectiveness of these interactions depended on how this interaction was mediated and how it was governed. Specifically, the strength of feedback loops, the role of intermediary actors, the accessibility of communication channels, and the extent to which citizen contributions were visibly acknowledged and incorporated into institutional processes. These factors ultimately shaped whether participation translated into meaningful engagement or remained largely procedural and performative.

The findings reveal important differences across the two Rwanda cases, demonstrating that meaningful e-participation outcomes depend not simply on adoption, but on how participation is governed, mediated, and institutionalized. In the case of the Citizens' Guide to the Budget, outcomes remained limited largely to awareness raising, budget literacy, and local accountability. Weak feedback loops, fragmented coordination, and limited integration of citizen input into decision-making created a persistent participation–impact gap, where citizens could not clearly see how their contributions influenced outcomes. The initiative therefore functioned more as a governance and oversight mechanism than as a genuinely participatory process for co-creating budget decisions. By contrast, Irembo.Gov demonstrated clearer instrumental outcomes, but more importantly reflected a form of institutional innovation and a gradual mindset shift toward a more citizen-centered approach to service delivery. Faced with low adoption challenges, the platform increasingly adapted its model to users' needs and constraints through agents, kiosks, USSD services, customer support systems, and continuous service redesign informed by user feedback. This responsiveness was reinforced by its public–private partnership (PPP) structure, which created stronger incentives for adaptation, performance, and user satisfaction.

7.4 Theoretical Contribution: The Revised E-Participation Framework for Meaningful Outcomes

The dissertation's primary theoretical contribution is the development of a Revised E-Participation Framework for Meaningful Outcomes that re-conceptualizes e-participation as a mediated governance process. The framework moves beyond fragmented approaches that examine supply-side and demand-side drivers separately and instead integrates them within a broader collaborative governance perspective. Importantly, the contribution extends beyond the integration of supply and demand-side drivers. The framework attempts to explain how the interaction between these drivers, conditioned by institutional willingness and power dynamics and mediated through feedback, responsiveness, inclusiveness and capacity building, determines whether e-participation adoption produces meaningful outcomes. In doing so, the framework offers an original perspective on the relationship between adoption, participation processes and outcomes.

The framework positions institutional willingness and power dynamics as foundational pre-conditions shaping participation processes. Institutional willingness refers to the extent to which governments are prepared to meaningfully engage citizens, respond to feedback, and incorporate

citizen input into governance processes. Power dynamics refer to asymmetries in agenda-setting authority, access to information, and the ability of citizens to influence decisions.

Building on this foundation, the framework integrates supply-side drivers, including e-government performance, organizational arrangements, leadership, institutional capacity, with demand-side drivers such as digital skills, trust, cultural values, and willingness to engage. These drivers converge at the supply-demand interface, where participation is operationalized and experienced in practice. At the intersection of these drivers, citizen input and capacity building mechanisms constitute the primary interface through which governments and citizens interact and shape participatory outcomes.

The framework further emphasizes the importance of mediation and governance quality. Participation outcomes depend not only on the existence of participatory mechanisms, but also on how these are mediated and governed. The findings demonstrate that meaningful outcomes are more likely to emerge when participation is embedded within strong feedback loops, inclusive and deliberative processes, real opportunities for citizens to influence policy and decision-making, and institutional arrangements that are responsive to citizen needs. Similarly, capacity building efforts are most effective when they enable citizens to apply their knowledge and skills through practical opportunities for engagement and are supported by intermediary actors that help bridge gaps between citizens and government. Together, these factors shape the quality of the supply–demand interface and determine whether participation remains largely procedural or evolves into a more adaptive, responsive, and meaningful governance process.

Finally, the framework places meaningful outcomes at the center of e-participation analysis. Ultimately, meaningful outcomes are what matter most. The value of e-participation lies not simply in generating interaction or increasing platform use, but in whether participation leads to tangible improvements in policy, service delivery, accountability, or citizen empowerment. Much of the existing literature has focused on adoption, access, or levels of engagement, often treating participation itself as an end goal (Medaglia, 2012; Steinbach et al., 2019). By contrast, this study distinguishes between tokenistic participation and meaningful outcomes, arguing that high levels of engagement do not necessarily translate into influence or meaningful change. This distinction offers a useful analytical contribution, particularly for understanding e-participation in practice, where participation mechanisms may be formally present yet produce limited impact on decision-making or governance processes.

The framework therefore shifts the analytical focus from whether citizens adopt or use e-participation mechanisms to the institutional and relational conditions under which participation generates meaningful outcomes. This distinction strengthens its contribution beyond a synthesis of existing approaches and provides a basis for comparative research across different institutional and development contexts.

7.5 Implications for Practice

Creating the conditions for meaningful participation

For policymakers seeking to establish e-participation initiatives, the findings of this study offer several important lessons. First, policymakers must be clear about the motivations for participation from the outset. This requires defining not only the objectives and expected outcomes of the initiative, but also the incentives, and governance arrangements that will encourage both providers and citizens to engage in good faith. Participation mechanisms should not be introduced simply because technology makes them possible, rather, they should be designed around a clear understanding of the problem they seek to address and the type of citizen influence they are intended to facilitate.

Second, these findings underscore the importance of institutional willingness. Even well-designed participation mechanisms and state-of-the-art technological platforms are unlikely to generate meaningful outcomes if institutions lack the willingness to respond to citizen input and incorporate it into governance processes. A central finding of this study is that technology alone is insufficient to generate meaningful participation outcomes.

And lastly, e-participation initiatives naturally, will be situated within existing institutional and power structures. Policymakers should therefore carefully consider whether the initiative creates meaningful opportunities for citizen influence or whether prevalent power structures inhibit opportunities for participation. A critical question is whether the initiative can carve out genuine spaces for citizen input that can shape policy priorities, administrative practices, or service delivery. Without such spaces, participation risks becoming procedural or symbolic, generating engagement without influence.

Institutionalizing Feedback Loops

Among the most actionable findings is the importance of institutionalized feedback loops. Effective feedback mechanisms enable governments to understand how citizens experience participatory processes and whether participation generates meaningful outcomes. More importantly, feedback mechanisms must genuinely *close the loop* by informing citizens how their input, concerns, and priorities have been considered and incorporated into decision-making processes. Citizens are more likely to engage when they can see that their participation is taken seriously and has the potential to influence outcomes.

Feedback loops therefore represent a relatively straightforward yet potentially high-impact intervention for improving the quality and legitimacy of participation. Strengthening feedback loops requires both technological and organizational improvements. While optimizing digital platforms and communication channels is important, equally critical are clear institutional responsibilities for collecting, processing, responding to, and communicating citizen feedback.

Social media, in particular, can provide an effective channel for two-way engagement and ongoing communication with citizens. By closing the participation loop, governments can strengthen trust, legitimacy, accountability, and citizen confidence in e-participation systems (Macintosh, 2004; Medaglia, 2012; Peixoto & Fox, 2016).

Implications for Rwanda

The Citizens' Guide to the Budget highlights the challenges of embedding participation within highly hierarchical and rigid governance arrangements, where participation processes are often predefined and leave limited room for adaptation, deliberation, or citizen influence. While the initiative seeks to promote citizen participation in planning and budgeting processes, it is mediated primarily through traditional participatory practices (Home-Grown Solutions), which were originally designed to mobilize collective action rather than facilitate deliberation and co-creation. Although these mechanisms have proven effective at mobilizing participation, participation that is primarily obligation-driven may generate high levels of attendance without creating meaningful opportunities for citizen influence. As a result, they risk reinforcing existing authority relationships and constraining bottom-up engagement. Creating more comfortable, independent, and inclusive spaces for participation, particularly for young people and marginalized groups, could strengthen the deliberative quality of engagement.

A deeper challenge concerns the institutional design of the Citizens' Guide itself. Its complex and fragmented ownership structure, and centralized organization limit local ownership, responsiveness, and accountability. Localizing the Guide at the district level could increase its relevance and strengthen community engagement. The findings also highlight the importance of intermediary actors such as civil society organizations, which can bridge gaps between citizens and government and facilitate more inclusive participation. Finally, the experience of Irembo.Gov offers valuable lessons for Rwanda's broader e-participation ecosystem. Its citizen-centric approach, emphasis on feedback integration, and continuous adaptation to user needs demonstrate how stronger responsiveness and institutional learning can help move participation beyond information sharing toward more meaningful forms of citizen influence.

Balancing Technology and Governance

Technology can play an important role in lowering participation barriers and creating new opportunities for citizen voice, particularly among younger and more digitally connected populations (Vicente & Novo, 2014). Digital platforms can create alternative spaces for engagement that are less dependent on traditional authority structures. However, technology alone is insufficient to transform governance (Bekkers & Homburg, 2007). Instead, the framework developed in this study suggests that meaningful outcomes emerge not from technology itself, but from the governance processes through which participation is mediated, institutionalized, and translated into action. The findings suggest that the transformative potential of digital tools

depends on how effectively technological innovation is balanced against demand-side constraints, including digital skills, accessibility, trust, and broader cultural and institutional contexts. Notably, trust in technology emerged as particularly important, in some cases outweighing trust in government as a determinant of adoption. Successful e-participation therefore requires considering the entire ecosystem around e-participation initiatives including technological infrastructure, digital capabilities, trust-building, and institutional capacity.

7.6 Implications for Research

Opening the Institutional "Black Box"

The study responds to calls to examine how participation is organized, mediated, and institutionalized in practice (Steinbach et al., 2019; Randma-Liiv, 2022). The findings demonstrate that outcomes depend not only on platform availability or adoption levels but also on mediation quality, institutional responsiveness, feedback integration, intermediary actors, and power relations. Future research should therefore investigate the causal mechanisms through which these factors shape participation outcomes and further develop concepts such as institutional willingness and mediation quality.

Meaningful Outcomes as a Research Agenda

At the same time, the findings suggest that the relationship between instrumental and transformative outcomes may be bidirectional. While transformative changes in institutional behavior may create the conditions for improved service delivery and greater participation, sustained instrumental gains may, over time, contribute to deeper forms of citizen influence, empowerment, and governance transformation. Future research should therefore explore these dynamics more systematically, examining the conditions under which instrumental and transformative outcomes reinforce one another. Such processes are likely to depend on broader preconditions, particularly the distribution of power between governments and citizens and the willingness of institutions to genuinely engage with citizens and incorporate their input into governance processes (Arnstein, 1969; Gaventa, 2006; Fung, 2015). In this respect, the framework developed in this study could provide a foundation for future research to examine how different configurations of institutional willingness, power dynamics, and governance quality shape the emergence and evolution of meaningful e-participation outcomes.

Developing-Country Contexts and Theory Building

The findings also highlight why developing-country contexts matter for theory building in e-participation research. Much of the existing literature is derived from advanced democracies with relatively mature institutional systems, higher digital literacy, and more established traditions of citizen participation (Medaglia, 2012; Steinbach et al., 2019). By contrast, Rwanda represents an analytically important and, in many respects, extreme case of digital transformation, combining

ambitious state-led digitalization efforts with hierarchical governance structures, uneven digital readiness, and constrained participatory space. These conditions make underlying governance dynamics more visible and help reveal how mediation quality, institutional willingness, and power relations shape e-participation outcomes. Developing-country contexts should therefore not be viewed as deficient, but as important settings of conceptual innovation and theory development (Walsham, 2017).

The Rwanda case further demonstrates that developing countries should not be viewed solely through a deficit lens. In some contexts, weaker legacy infrastructure and the absence of heavily entrenched administrative systems may create opportunities for more rapid digital development and adoption of newer technologies (World Bank, 2016). Unlike many advanced economies burdened by fragmented legacy systems and institutional path dependencies, developing countries may possess greater flexibility to implement integrated digital platforms and redesign governance processes more rapidly. Rwanda's experience with Irembo.Gov illustrates how developing-country contexts can simultaneously face significant structural constraints while also serving as sites of institutional and technological innovation.

Hybrid Participation Mechanisms

Additional research is also needed on hybrid participation mechanisms that combine digital platforms with offline deliberative structures, particularly in developing-country contexts where digital divides remain significant. The findings of this study suggest that relying exclusively on digital tools may unintentionally reinforce existing inequalities by privileging citizens with greater access, education, or technical skills, while excluding marginalized groups, rural populations, women, older citizens, or individuals with limited digital capabilities. Hybrid models that integrate online participation with community meetings, intermediary actors, local facilitation, mobile outreach, radio communication, or paper-based feedback mechanisms may therefore provide more inclusive pathways for engagement. Examining how online and offline mechanisms complement one another could provide important insights into how participation processes can become more inclusive and bridge digital divides.

Bibliography

Adnan, H. (2022). E-participation in developing countries: A critical review. *Journal of E-Governance Studies and Best Practices, 2022*, 1–10.

Al-Dalou, R., & Abu-Shanab, E. (2013, May). E-participation levels and technologies. *In The 6th International Conference on Information Technology* (ICIT 2013) (pp. 8-10).

Alharbi, A., Kang, K., & Hawryszkiewycz, I. (2016). The influence of trust and subjective norms on citizens' intentions to engage in e-participation on e-government websites. *International Journal of Networking and Virtual Organisations, 16*(1), 33–51.

Ali, M., & Bailur, S. (2007). The challenge of sustainability in ICT4D: Is bricolage the answer? In *Proceedings of the 9th International Conference on Social Implications of Computers in Developing Countries* (IFIP WG 9.4), São Paulo, Brazil, 28–30 May 2007

Alomari, M., Woods, P., & Sandhu, K. (2012). Predictors for e-government adoption in Jordan: Deployment of an empirical evaluation based on a citizen-centric approach. *Information Technology & People,* 25(2), 207–234.

Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory, 18*(4), 543–571.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216–224.

Ary, D., Jacobs, L.C., Sorensen, C.K. and Walker, D. (2014) *Introduction to Research in Education.* 9th Edition, Wadsworth, London.

Åström, J., Karlsson, M., Linde, J., & Pirannejad, A. (2012). Understanding the rise of e-participation in non-democracies: Domestic and international factors. *Government Information Quarterly*, 29(2), 142–150.

Avdic, A., Hedström, K., Rose, J., & Grönlund, Å. (Eds.). (2007). *Understanding eParticipation: Contemporary PhD eParticipation research in Europe*. Örebro University Press.

Baker, J. (2012). The technology–organization–environment framework. In Y. K. Dwivedi, M. R. Wade, & S. L. Schneberger (Eds.), *Information systems theory* (pp. 231–245). Springer.

Bakunzibake, P., Klein, G. O., & Islam, M. S. (2019). E-government implementation and monitoring: The case of Rwanda's 'one-stop' e-government. *The Electronic Journal of Information Systems in Developing Countries, 85*(5), Article e12086. https://doi.org/10.1002/isd2.12086

Bannister, F., & Connolly, R. (2015). The great theory hunt: Does e-government really have a problem? *Government Information Quarterly, 32*(1), 1–11. https://doi.org/10.1016/j.giq.2014.10.003

Bekkers, V., & Homburg, V. (2007). The myths of e-government: Looking beyond the assumptions of a new and better government. *The Information Society, 23*(5), 373–382. https://doi.org/10.1080/01972240701572913

Bélanger, F., & Carter, L. (2008). Trust and risk in e-government adoption. *Journal of Strategic Information Systems,* 17(2), 165–176.

Bingham, A. J., & Witkowsky, P. (2022). Deductive and inductive approaches to qualitative data analysis. In C. Vanover, P. Mihas, & J. Saldaña (Eds.), *Analyzing and interpreting qualitative data: After the interview*. Sage Publications.

Borge, R., Brugué, J., & Dueñas-Cid, D. (2022). Technology and democracy: The who and how in decision-making. The cases of Estonia and Catalonia. *Profesional de la Información*, 31(3), e310311. https://doi.org/10.3145/epi.2022.may.11

Boudjelida, A., Mellouli, S., & Lee, J. (2016). Electronic participation in policy-making: A systematic review. *Government Information Quarterly*, 33(2), 250–257.

Bovaird, T. (2007), Beyond Engagement and Participation: User and Community Coproduction of Public Services. *Public Administration Review*, 67: 846-860.

Bovaird, T., & Löffler, E. (2012). From engagement to co-production: The contribution of users and communities to outcomes and public value. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 23(4), 1119–1138. https://doi.org/10.1007/s11266-012-9309-6

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Bryman, A. (2008). *Social Research Methods* (3rd ed.). Oxford University Press.

Bwalya, K. J. (2018). *Decolonisation of e-government research and practice: Exploring contextual issues and opportunities in Africa*. AOSIS.

Carter, L. and Bélanger, F. (2005), The utilization of e-government services: citizen trust, innovation and acceptance factors*. *Information Systems Journal*, 15: 5-25.

Chadwick, A. (2006). *Internet politics: States, citizens, and new communication technologies*. Oxford University Press.

Charmaz, K. (2014). *Constructing Grounded Theory* (2nd ed.). Sage Publications.

Choi, J., & Song, C. (2020). Factors explaining why some citizens engage in e-participation, while others do not. *Government Information Quarterly, 37*(4), 101524. https://doi.org/10.1016/j.giq.2020.101524

Clarke, A., & Craft, J. (2019). The twin faces of public sector design. *Governance,* 32(1), 5–21. https://doi.org/10.1111/gove.12342

Cordella, A., & Paletti, A. (2019). Government as a platform, orchestration, and public value creation: The Italian case. *Government Information Quarterly,* 36(4), 101409.

Cordella, A., & Tempini, N. (2015). E-government and organizational change: Reappraising the role of ICT and bureaucracy in public service delivery. *Government Information Quarterly,* 32(3), 279–286. https://doi.org/10.1016/j.giq.2015.03.005

Cruz-Jesus, F., Oliveira, T., & Videira, N. (2012). Digital divide across the European Union. *Information & Management, 49*(6), 278–291.

Davis, F. (1989) Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13, 319-340.

Dener, C., Watkins, J. A., & Dorotinsky, W. L. (2011). *Financial management information systems: 25 years of World Bank experience on what works and what doesn't*. World Bank.

Dimitrova, D. V., & Chen, Y.-C. (2006). Profiling the adopters of e-government information and services: The influence of psychological characteristics, civic mindedness, and information channels. *Social Science Computer Review,* 24(2), 172–188.

Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory*, 22(1), 1–29. https://doi.org/10.1093/jopart/mur011

Epstein, D., Newhart, M., & Vernon, R. (2014). *Not by technology alone: The "analog" aspects of online public engagement in policymaking. Government Information Quarterly*, 31(2), 337–344. https://doi.org/10.1016/j.giq.2014.01.001

Font, J., & Navarro, C. (2013). Personal experience and the evaluation of participatory instruments in Spanish cities. *Public Administration, 91*, 616–631. https://doi.org/10.1111/j.1467-9299.2012.02106.x

Freschi, A. C., Medaglia, R., & Nørbjerg, J. (2009). A Tale of Six Countries: eParticipation Research from an Administration and Political Perspective. *In Electronic Participation: First International Conference,* ePart 2009 Linz, Austria, August 31–September 4, 2009 Proceedings (pp. 36-45). Springer Science+Business Media.

Fung, A. (2015). Putting the public back into governance: The challenges of citizen participation and its future. *Public Administration Review*, 75(4), 513–522.

Galston, William A. "Political Knowledge, Political Engagement, and Civic Education." *Annual Review of Political Science* 4, no. 1 (2001): 217–234. https://doi.org/10.1146/annurev.polisci.4.1.217.

Gelb, A., & Metz, A. D. (2018). *Identification Revolution: Can Digital ID be Harnessed for Development?* Brookings Institution Press. http://www.jstor.org/stable/10.7864/j.ctt21c4t40

Gigler, B.-S., & Bailur, S. (Eds.). (2014). *Closing the feedback loop: Can technology bridge the accountability gap?* World Bank.

Gil-García, J. R., & Pardo, T. A. (2005). E-government success factors: Mapping practical tools to theoretical foundations. *Government Information Quarterly*, 22(2), 187–216.

Hasselskog M. Rwandan "home grown initiatives": Illustrating inherent contradictions of the democratic developmental state. *Dev Policy Rev*. 2018;36:309–328. https://doi.org/10.1111/dpr.12217

Heeks, R. (2002). Information systems and developing countries: Failure, success, and local improvisations. *The Information Society, 18*(2), 101–112.

Heeks, R. (2008). ICT4D 2.0: The next phase of applying ICT for international development. *Computer, 41*(6), 26–31. https://doi.org/10.1109/MC.2008.192

Heeks, R., & Bailur, S. (2007). Analyzing e-government research: Perspectives, philosophies, theories, methods, and practice. *Government Information Quarterly, 24*(2), 243–265. https://doi.org/10.1016/j.giq.2006.06.005

Heeks, R., & Shekhar, S. (2019). Datafication, development and marginalised urban communities: An applied data justice framework. *Information, Communication & Society, 22*(7), 992–1011. https://doi.org/10.1080/1369118X.2019.1599039

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*(2nd ed.). Sage Publications.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind:Intercultural cooperation and its importance for survival* (3rd ed.). McGraw-Hill.

Hoppe, R. (2011). Institutional constraints and practical problems in deliberative and participatory policy making. *Policy and Politics, 39*(2), 163–186.

Huang, F., Teo, T., Sánchez-Prieto, J. C., García-Peñalvo, F. J., & Olmos-Migueláñez, S. (2019). Cultural values and technology adoption: A model comparison with university teachers from China and Spain. *Computers & Education, 133*, 69–81. https://doi.org/10.1016/j.compedu.2019.01.012

Include Knowledge Platform. (2022). *Digital Divides or Dividends? Assessing the Inclusiveness of Basic Services in Rwanda's Digitalization Agenda.* The Hague: INCLUDE Knowledge Platform.

Inglehart, R., & Welzel, C. (2005). *Modernization, cultural change, and democracy: The human development sequence*. Cambridge University Press.

Ingrams, A., Manoharan, A., Schmidthuber, L., & Holzer, M. (2020). Stages and determinants of e-government development: A twelve-year longitudinal study of global cities. *International Public Management Journal, 23*(6), 731–769. https://doi.org/10.1080/10967494.2018.1467987

International Telecommunication Union. (2021). *Switching on smart Rwanda: Digital inclusion, collaboration and a G5 mindset*. International Telecommunication Union. Geneva, Switzerland. Switching on Smart Rwanda: Digital inclusion, collaboration and a G5 mindset

Islam, M. S. (2008). Towards a sustainable e-participation implementation model. *European Journal of ePractice, 5*, 1–12.

Jan, J., Alshare, K. A., & Lane, P. L. (2024). Hofstede's cultural dimensions in technology acceptance models: A meta-analysis. *Universal Access in the Information Society, 23*, 717–741.

Kim, S., & Lee, J. (2012). Citizens' perceived effectiveness of e-participation initiatives is a significant determinant of trust in government, which subsequently influences their willingness to engage in future participatory activities. *International Review of Administrative Sciences, 78*(1), 133–154.

Kumar, R., et al. (2020). Cultural values and e-government adoption: A comparative study. *Journal of Global Information Management, 28*(1), 1–21.

Layne, K., & Lee, J. (2001). Developing fully functional e-government: A four stage model. *Government Information Quarterly, 18*(2), 122–136.

Le Blanc, D. (2020). *E-participation: A quick overview of recent qualitative trends*. DESA Working Paper 163. United Nations Department of Economic and Social Affairs. https://doi.org/10.18356/0f898163-en

Linders, D. (2012). From e-government to we-government: Defining a typology for citizen coproduction in the age of social media. *Government Information Quarterly, 29*(4).

Loeffler, E., & Bovaird, T. (Eds.). (2021). *The Palgrave handbook of co-production of public services and outcomes.* Palgrave Macmillan.

Löfstedt, U. (2005). E-government: Assessment of current research and some proposals for future directions. *International Journal of Public Information Systems,* 1(1), 39–52.

Luna-Reyes, L. F., & Gil-García, J. R. (2014). Digital government transformation and internet portals: The co-evolution of technology, organizations, and institutions. *Government Information Quarterly, 31*(4), 545–555.

Macintosh, A. (2004). Characterizing e-participation in policy-making. In *Proceedings of the 37th Annual Hawaii International Conference on System Sciences (HICSS-37)* (Vol. 10, pp. 1–10).

Macintosh, A., & Whyte, A. (2006). *Evaluating how eParticipation changes local democracy*. In A. Cunningham & P. Cunningham (Eds.), *Exploiting the knowledge economy: Issues, applications, case studies* (pp. 364–369). IOS Press.

Macintosh, A., & Whyte, A. (2008). Towards an evaluation framework for e-participation. *Transforming Government: People, Process and Policy, 2*(1), 16–30. https://doi.org/10.1108/17506160810862928

Macintosh, A., Coleman, S., & Schneeberger, A. (2009). eParticipation: The research gaps. In A. Macintosh & E. Tambouris (Eds.), *Electronic participation* (pp. 1–11). Springer. https://doi.org/10.1007/978-3-642-03781-8_1

Mariani, I., Mortati, M., Rizzo, F., & Deserti, A. (2024). The theoretical background of design thinking for public sector innovation. In I. Mariani, M. Mortati, F. Rizzo, & A. Deserti (Eds.), *Design thinking as a strategic approach to e-participation: From current barriers to opportunities* (pp. 57–74). Springer Nature. https://doi.org/10.1007/978-3-031-72160-1_4

Marzouki, A., Mellouli, S., & Daniel, S. (2022). Understanding issues with stakeholders participation processes: A conceptual model of SPPs' dimensions of issues. *Government Information Quarterly, 39*(2).

McCall, M. K., & Dunn, C. E. (2012). Geo-information tools for participatory spatial planning: Fulfilling the criteria for "good" governance? *Geoforum, 43*(1), 81–94.

Medaglia, R. (2012). eParticipation research: Moving characterization forward (2006–2011). *Government Information Quarterly, 29*(3), 346–360.

Meijer, A. (2012). Co-production in an information age: Individual and community perspectives on service delivery. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 23*(4), 1156–1172.

Mertes, A., Fischer, D., Brüesch, C., & Andermatt, K. C. (2022). The Perceived Advantages of e-Participation and its Impact on Citizens' Willingness to Engage: Findings From the Canton of Zurich. *Swiss Yearbook of Administrative Sciences,* 13(1), pp. 131–148.

Ministry of Finance and Economic Planning of Rwanda, CLADHO, & UNICEF. (2022). *Citizens' Guide to the Budget 2022/2023*. Kigali: MINECOFIN.

Ministry of Finance and Economic Planning of Rwanda, CLADHO, & UNICEF. (2022). *Citizens' Guide to the Budget 2023/2024*. Kigali: MINECOFIN.

Ministry of Finance and Economic Planning. (2020). *Rwanda vision 2050*.

Ministry of Finance and Economic Planning. (2017). *National strategy for transformation (NST1), 2017–2024*.

Ministry of Information and Communications Technology. (2001–2015). *National information and communication infrastructure (NICI) plans I, II, and III*.

Ministry of Information and Communications Technology. (2015). *Smart Rwanda 2020 master plan*.

Ministry of Information and Communications Technology. (2018). *Rwanda's ICT sector strategic plan (2018–2024)*.

Ministry of Finance and Economic Planning. (2013). *Fiscal and financial decentralization policy*.

Ministry of Local Government. (2007). *National decentralization policy*.

Ministry of Finance and Economic Planning. *Economic development and poverty reduction strategy 2008–2012*.

Ministry of Finance and Economic Planning. *Economic development and poverty reduction strategy II, 2013–2018*.

Ministry of Local Government. (2019). *National local economic and community development policy*.

Mitozo, I., & Marques, F. P. J. A. (2019). Context matters! Looking beyond platform structure to understand citizen deliberation on Brazil's Portal e-Democracia. *Policy & Internet, 11*(3), 370–390. https://doi.org/10.1002/poi3.196

Mossberger, K., Tolbert, C. J., & McNeal, R. S. (2013). *Digital citizenship: The internet, society, and participation*. MIT Press.

Mukamurenzi, S., Grönlund, Å., & Islam, M. S. (2019). Challenges in implementing citizen-centric e-government services in Rwanda. *Electronic Government, 15*(3), 283–302. https://doi.org/10.1504/EG.2019.100519

Nabatchi, T., & Amsler, L. B. (2014). Direct public engagement in local government. *The American Review of Public Administration, 44*(4_suppl), 63S–88S.

Nabatchi, T., Sancino, A., & Sicilia, M. (2017). Varieties of participation in public services: The who, when, and what of coproduction. *Public Administration Review, 77*(5), 766–776. https://doi.org/10.1111/puar.12765

Nam, T. (2014). Determining the type of e-government use. *Government Information Quarterly, 31*(2), 211–220.

National Endowment for Democracy & Never Again Rwanda. (2017). *Promoting Youth Leadership in Democratic Governance: Training Manual*.

National Institute of Statistics of Rwanda. (2022). *Imihigo 2021/2022: Evaluation executive report*.

Never Again Rwanda. (2016). *Governing With and For Citizens: Lessons From a Post-Genocide Rwanda*. Kigali: Never Again Rwanda.

Naranjo Zolotov, M., Oliveira, T., & Casteleyn, S. (2018). E-participation adoption models research in the last 17 years: A weight and meta-analytical review. *Computers in Human Behavior, 81*, 350–365. https://doi.org/10.1016/j.chb.2017.12.031

Norwegian People's Aid. (2022). *A Compendium of Stories of Change for the PPIMA Project*. Oslo: Norwegian People's Aid.

Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the internet worldwide*. Cambridge University Press.

Norris, P., & Inglehart, R. (2019). *Cultural backlash: Trump, Brexit, and authoritarian populism*. Cambridge University Press. https://doi.org/10.1017/9781108595841

Norris, D. F., & Reddick, C. G. (2013). Local e-government in the United States: Transformation or incremental change? *Public Administration Review, 73*(1), 165–175. https://doi.org/10.1111/j.1540-6210.2012.02647.x

OECD. (2004). *Promise and Problems of E-Democracy: Challenges of Online Citizen Engagement*. OECD Publishing.

OECD. (2020). *Innovative citizen participation and new democratic institutions: Catching the deliberative wave.* OECD Publishing. https://doi.org/10.1787/339306da-en

OECD. (2023). *OECD Economic Surveys: Germany 2023.* OECD Publishing.

Ohemeng, F. L. K., & Ofosu-Adarkwa, K. (2015). One way traffic: The open data initiative project and the need for an effective demand side initiative in Ghana. *Government Information Quarterly, 32*(4), 419–428.

Okeke-Uzodike, O. E., & Dlamini, B. I. (2019). Citizens' e-participation at local municipal government in South Africa. *Journal of Reviews on Global Economics, 8*, 458–468. https://doi.org/10.6000/1929-7092.2019.08.39

Oliveira, C., & Garcia, A. C. B. (2019). Citizens' electronic participation: A systematic review of their challenges and how to overcome them. *International Journal of Web Based Communities*.

Oliveira, T., & Martins, M. F. (2011). Literature review of information technology adoption models at firm level. *The Electronic Journal Information Systems Evaluation, 14*(1), 110–121.

Osborne, S. P., & Strokosch, K. (2013). It takes two to tango? Understanding the co-production of public services by integrating the services management and public administration perspectives. *British Journal of Management, 24*, S31–S47.

Ostrom, E. (1996). Crossing the great divide: Coproduction, synergy and development. *World Development*, 24(6), 1073–87.

Panopoulou, E., Tambouris, E., & Tarabanis, K. (2014). Success factors in designing eParticipation initiatives. *Information and Organization, 24*(4), 195–213. https://doi.org/10.1016/j.infoandorg.2014.08.001

Papadopoulou, P., Nikolaidou, M., & Martakos, D. (2010). What is trust in e-government? A proposed typology. In *Proceedings of the 43rd Hawaii International Conference on System Sciences* (pp. 1–10). IEEE.

Parra Beltrán, S. (2015). *Government driven e-participation: The case of "Urna de Cristal" in the Colombian context* (Master's thesis, Uppsala University). Uppsala University Publications.

Pateman, C. (1970). *Participation and democratic theory.* Cambridge University Press.

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications.

Peixoto, T., & Fox, J. (2016). When does ICT-enabled citizen voice lead to government responsiveness? *IDS Bulletin, 47*(1), 23–39.

Peixoto, T., & Sifry, M. L. (Eds.). (2017). *Civic tech in the global south: Assessing technology for the public good.* World Bank. http://hdl.handle.net/10986/27947

Pérez-Morote, R., Pontones-Rosa, C., & Núñez-Chicharro, M. (2020). The effects of e-government evaluation, trust and the digital divide on the levels of e-government use in European countries. *Technological Forecasting and Social Change*, 154, 119973.

Pirannejad, A., Janssen, M., & Rezaei, J. (2019). Towards a balanced perspective of e-participation: Reconciling supply and demand-side factors. *Government Information Quarterly, 36*(4), 101393.

Pollitt, C., & Bouckaert, G. (2011). *Public management reform: A comparative analysis—New public management, governance, and the neo-Weberian state (3rd ed.).* Oxford University Press.

Poirier, D. (2026). E-participation adoption: Case studies of supply and demand-side dynamics in Rwanda. In T. X. Bui (Ed.), *Proceedings of the 59th Hawaii International Conference on System Sciences (HICSS-59)* (pp. 2166). University of Hawai‘i at Mānoa. https://doi.org/10.24251/HICSS.2026.262

Randma-Liiv, T., & Vooglaid, K. M. (2019). *Organizing for e-participation: Learning from European experiences: Work Package 5 – Deliverable D5.2. Tallinn University of Technology.*

Randma-Liiv, T. (2022). Organizing e-participation: Challenges stemming from the multiplicity of actors. *Public Administration,* 100(4), 1037–1053.

Reddick, C. G., & Norris, D. F. (2013). E-participation in local governments: an empirical examination of impacts. *In Proceedings of the 14th Annual International Conference on Digital Government Research (dg.o '13). Association for Computing Machinery,* New York, NY, USA, 198–204. https://doi.org/10.1145/2479724.2479753

Rowe, G., & Frewer, L. J. (2000). Public participation methods: A framework for evaluation. *Science, Technology, & Human Values, 25*(1), 3–29.

Rowe, G., & Watermeyer, R. P. (2018). Dilemmas of public participation in science policy. *Policy Studies, 39*(2), 204–221. https://doi.org/10.1080/01442872.2018.1451502

Royo, S., Pina, V., & García-Rayado, J. (2020). Decide Madrid: A critical analysis of an award-winning e-participation initiative. *Sustainability*, *12*(4), 1674. https://doi.org/10.3390/su12041674

Royo, S., Bellò, B., Torres, L., & Downe, J. (2024). The success of e-participation: Learning lessons from Decide Madrid and “We asked, you said, we did” in Scotland. *Policy & Internet, 16*(1), 65–82.

Rwanda Civil Society Platform. (2018). Rwanda civil society development barometer 2018. URL Rwanda_Civil_Society_Development_Barometer_2018.pdf

Rwanda Governance Board. (2016). National Umushyikirano Council: A Decade of Delivering Democracy and Development to Rwandans, 2003–2014.

Rwanda Governance Board. (2022). *Citizen report card 2022*.

Rwanda Governance Board. (2023). *Citizen report card 2023*.

Rwanda Information Society Authority. (2020). *ICT for governance cluster strategy (2020–2024)*

Sæbø, Ø., Rose, J., & Flak, L. S, (2008). The shape of eParticipation: Characterizing an emerging research area, *Government Information Quarterly*, Volume 25, Issue 3, 2008.

Sæbø, Ø., Flak, L. S., & Sein, M. K. (2011). Understanding the dynamics in e-participation initiatives: Looking through the genre and stakeholder lenses. *Government Information Quarterly, 28*(3), 416–425. https://doi.org/10.1016/j.giq.2010.10.005

Scherer, S., & Wimmer, M. A. (2014). Conceptualising trust in e-participation contexts. In E. Tambouris, A. Macintosh, & F. Bannister (Eds.), *Electronic participation* (Lecture Notes in Computer Science, Vol. 8654). Springer. https://doi.org/10.1007/978-3-662-44914-1_6

Schuppan, T. (2009). E-government in developing countries: Experiences from sub-Saharan Africa. Government Information Quarterly, 26(1), 118–127. https://doi.org/10.1016/j.giq.2008.01.006

Seawright, J., & Gerring, J. (2008). Case selection techniques in case study research: A menu of qualitative and quantitative options. *Political Research Quarterly, 61*(2), 294–308. https://doi.org/10.1177/1065912907313077

Smith, G. (2009). *Democratic innovations: Designing institutions for citizen participation.* Cambridge University Press.

Sørensen, E., & Torfing, J. (2016). *Theories of democratic network governance.* Palgrave Macmillan.

Steinbach, M., Sieweke, J., & Süß, S. (2019). The diffusion of e-participation in public administrations: A systematic literature review. *Journal of Organizational Computing and Electronic Commerce, 29*(2), 61–95. https://doi.org/10.1080/10919392.2019.1552749

Stebbins, R. A. (2001). *Exploratory research in the social sciences.* Sage Publications.

Susha, I., & Grönlund, Å. (2012). eParticipation research: A systematic review. *Government Information Quarterly, 29*(3), 373–382.

Sweeney, A. D. P. (2008). Electronic government–citizen relationships: Exploring citizen perspectives. *Journal of Information Technology & Politics, 4*(2), 101–116. https://doi.org/10.1080/19331680802076165

The New Times. (2022). *Irembo launches new drive to revolutionize the way citizens access government services.* Kigali: The New Times.

The New Times. (2023). *Car Free Day: Irembo spurs digital literacy sustainability.* Kigali: The New Times.

Tambouris, E., Liotas, N., & Tarabanis, K. (2007). A framework for assessing eParticipation projects and tools. In *Proceedings of the 40th Annual Hawaii International Conference on System Sciences (HICSS '07)* (p. 90). IEEE Computer Society. https://doi.org/10.1109/HICSS.2007.13

Toots, M. (2019). Why e-participation systems fail: The case of Estonia's Osale.ee. *Government Information Quarterly, 36*(3), 546–559. https://doi.org/10.1016/j.giq.2019.02.002

Tornatzky, L. G., & Fleischer, M. (1990). *The processes of technological innovation.* Lexington Books.

Trochim, W. M. K. (1989). An introduction to concept mapping for planning and evaluation. *Evaluation and Program Planning, 12*(1), 1–16.

United Nations. (2022). *United Nations e-government survey 2022: The future of digital government*. United Nations Department of Economic and Social Affairs

van Deursen, A. J. A. M., & van Dijk, J. A. G. M. (2011). Internet skills and the digital divide. *New Media & Society, 13*(6), 893–911.

van Dijk, J. A. G. M. (2006). Digital divide research, achievements and shortcomings. *Poetics, 34*(4–5), 221–235. https://doi.org/10.1016/j.poetic.2006.05.004

van Dijk, J. (2019). *The digital divide*. Polity Press.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478.

Vicente, M. R., & Novo, A. M. (2014). An empirical analysis of e-participation: The role of social networks and e-government over citizens' online engagement. *Government Information Quarterly, 31*(3), 379–387.

Voorberg, W. H., Bekkers, V. J. J. M., & Tummers, L. G. (2015). A systematic review of co-creation and co-production: Embarking on the social innovation journey. *Public Management Review, 17*(9), 1333–1357. https://doi.org/10.1080/14719037.2014.930505

Waheduzzaman, W., & As-Saber, S. (2015). Community participation and local governance in Bangladesh. *Australian Journal of Political Science*, *50*(1), 128–147. https://doi.org/10.1080/10361146.2014.989194

Walsham, G. (2017). ICT4D research: Reflections on history and future agenda. *Information Technology for Development, 23*(1), 18–41. https://doi.org/10.1080/02681102.2016.1246406

Wampler, B. (2007). *A guide to participatory budgeting. In A. Shah (Ed.), Participatory budgeting (pp. 21–54)*. World Bank Institute.

Wijnhoven, F., Ehrenhard, M., & Kuhn, J. (2015). Open government objectives and participation motivations. *Government Information Quarterly, 32*(1), 30–42. https://doi.org/10.1016/j.giq.2014.10.002

Wirtz, B. W., Daiser, P., & Binkowska, B. (2018). E-participation: A strategic framework. *International Journal of Public Administration, 41*(1), 1–12.

World Bank. (2016). *World development report 2016: Digital dividends*. https://doi.org/10.1596/978-1-4648-0671-1

World Bank. (2021). Rwanda - Advancing Citizen Engagement Project (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/168571643904806449

Yavuz, N., & Welch, E. (2014). Factors affecting openness of local government websites: Examining the differences across planning, finance and police departments. *Government Information Quarterly, 31*(4), 574–583. https://doi.org/10.1016/j.giq.2014.07.004

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Sage Publications.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage Publications.

Yuan, Q., & Gasco-Hernandez, M. (2021). Open innovation in the public sector: Creating public value through civic hackathons. *Public Management Review, 23*(11), 1621–1641.

Zheng, Y. (2015). Explaining citizens' e-participation usage: Functionality of e-participation applications. *Administration & Society, 49*(3), 423–442. (Original work published 2017)

Zheng, Y., & Schachter, H. L. (2017). Explaining citizens' e-participation use: The role of perceived advantages. *Information Polity, 22*(4), 227–243.

Short Bio

Dobrina Poirier is an Economic Affairs Officer at the United Nations Conference on Trade and Development New York Office, where she supports intergovernmental processes on financing for development, ICT, STI, debt and investment. Previously, she served as an Economic Affairs Officer at the United Nations Economic Commission for Africa, based in Addis Ababa, Ethiopia. There she worked across the Technology, Climate Change and Natural Resource Management Division and the Office of the Executive Secretary, with a focus on digital transformation, innovation, and global financial architecture issues.

Ms. Poirier has also held positions at the World Bank, including within the Chief Economist Office for Europe and Central Asia and the Governance Global Practice, where she worked on digital governance, public sector reform, and data analytics. Earlier in her career, she worked at the Investment Board of Bulgaria and in the private sector, where she oversaw geographic expansions in East Asia, Egypt, and Bulgaria to support technology and business services companies.

Her interest in technology and digital transformation spans much of her professional career and was further solidified through her work in Africa, where she witnessed firsthand the transformative opportunities that digital technologies can create for development, public service delivery, and citizen engagement.

Ms. Poirier holds a Master of Public Administration in Advanced Economic Policy Management from Columbia University's School of International and Public Affairs and an undergraduate degree in Industrial Management from Technical University of Sofia. She also holds a certificate in Data Science and Big Data Analytics from Massachusetts Institute of Technology.

Impact Paragraph

This dissertation set out to address a central puzzle in the e-participation literature: why the proliferation of digital participation initiatives has not translated into widespread adoption or meaningful outcomes in practice. While governments around the world have invested heavily in digital platforms, online consultations, and e-government systems, evidence of sustained citizen engagement and meaningful influence on policymaking and service delivery remains uneven and limited.

The literature has traditionally approached this puzzle through fragmented analytical lenses. Much of the research has either focused on supply-side drivers, such as platform design, institutional capacity, and e-government performance, or on demand-side drivers, including trust, digital skills and willingness to participate. This fragmentation is counter to the very essence of participation which is interned as a deliberative process that brings citizens and government together.

This dissertation argues that e-participation outcomes are not determined by supply or demand-side drivers in isolation, but by how their interaction is mediated, governed, and embedded within decision-making structures. Through a mixed-methods design combining longitudinal quantitative analysis across European regions with qualitative case studies in Rwanda, the study demonstrates that technological provision alone is insufficient to generate meaningful participation. Rather, adoption and outcomes depend on the quality of mediation at the citizen–government interface, including the strength of feedback loops, institutional responsiveness, inclusiveness, and the extent to which participation is perceived by citizens as impactful.

The study makes four main contributions to the e-participation literature. First, it demonstrates that demand-side drivers are not secondary but central to explaining e-participation adoption and use. Across both the European and Rwandan analyses, factors such as digital skills, civic engagement, and cultural norms emerge as stronger predictors of adoption than supply-side indicators alone. Second, the study reconceptualizes e-participation as a mediated governance process. Rather than focusing solely on the interaction between supply and demand-side drivers, the findings show that what matters is how this interaction is mediated, governed, and institutionalized through specific organizational arrangements, feedback systems, and participatory practices. Third, the study contributes to the literature by demonstrating that adoption alone does not necessarily generate meaningful participation outcomes. Hierarchical societies can in effect mandate participatory practices leading to high adoption levels, but these are likely to remain procedural if not supported by effective governance arrangements. Finally, the findings contribute to the development of a Revised E-Participation Framework for Meaningful Outcomes, which conceptualizes participation as a relational governance process shaped by pre-conditional factors, particularly institutional willingness and power dynamics, as well as by the quality of mediation at the supply–demand interface. The elements of the framework determine whether e-participation initiatives are likely

to bloom into generating meaningful outcomes or are effectively doomed to remain largely procedural from the outset.

Together, these contributions shift the analytical focus of e-participation research away from technological provision alone and toward the institutional and governance processes through which participation is enabled, mediated, and translated into meaningful outcomes.

Annex I: Cluster Comparison: Evolution of Key Variables Across E-Participation Adoption Groups (2010 and 2022)

Variable	C1 2010	C1 2022	C2 2010	C2 2022	C3 2010	C3 2022
Internet Use (e-commerce) %	20.6	55.3	49.8	68.6	69.3	84
E-participation adoption %	30	30.5	57.3	62.1	77.4	85.9
incl. Submitting Forms (2010→2020) %	14.3	22.6	32.5	35.5	54.4	70.5 *(2010→2020)*
E-government Performance (OSI)	0.46	0.79	0.54	0.8	0.7	0.9
Governance Quality(EQI Δ)	-0.66	-0.43	0.68	0	1.68	1.52
GDP per Capita (Euro)	13,893	29,766	26,961	35,364	41,443	49,103
Liberal Values (0-1)	0.63	0.69	0.72	0.72	0.81	0.87
Trust in Government (0-1)	0.32	0.38	0.47	0.43	0.58	0.6
Petitions %	13.47	15.33	24.52	18.99	31.4	25.18

Annex II: Main Stakeholders in E-Participation Initiatives

Table II A: Main Stakeholders and their Roles for the Citizens' Guide to the Budget

Stakeholder	Stakeholder Type	Description of Role
Ministry of Finance and Economic Planning (MINECOFIN)	Government	Prepares the booklet and works with civil society to collect and integrate feedback from citizens and presents the booklet at community convenings.
Umbrella Human Rights Organization (CLADHO)	CSO	Umbrella Human Rights Organization in charge of supporting and disseminating the booklet, collecting citizen feedback, and providing capacity building.
Local Administrative Entities Development Agency (LODA) / Ministry of Local Government (MINALOC)	Government	Works with CLADHO during citizen consultation at the local level and maintains the MEIS database to repository citizen priorities for the budget.
Never Again Rwanda (NAR)	CSO	Leads civil consultations with local leaders and citizens, provides capacity building on the budgeting process, and documents citizen input.
Youth Association for Human Rights Promotion and Development (AJPRODHO)	CSO	Amplifies youth voices by mobilizing Governance Focal Points to collect issues at cell levels and monitor local service delivery via Community Score Cards.
UNICEF	International Org	Provides financial assistance for development and printing of the guide, and empowers children and youth representatives to participate in budgeting.
Norwegian People's Aid	International Org	Provides funding and capacity building for local CSOs and promotes the use of the Community Score Card model to engage citizens and government.

Table II B: Main Stakeholders and their Roles for Irembo.Gov

Stakeholder	Stakeholder Type	Description of Role
Rwanda Information Society Authority (RISA)	Government	Coordinates digital transformation efforts, providing policy and technical support for service integration and supporting capacity building initiatives.
Irembo's Agent Network	Private Sector/Agent Network	Distributed network of kiosks that assists users with applications, payments, and document management, ensuring inclusive access for all citizens.
Government Agencies	Government	Custodians and providers of the services; they collaborate on re-engineering workflows and monitor compliance with Service Level Agreements.
Users	User/Citizen	Citizens and businesses accessing services through self-service or agents; they provide feedback through surveys and social media to inform improvements.

Stakeholder	Stakeholder Type	Description of Role
Rwanda Governance Board (RGB)	Government	Independently evaluates Irembo performance via Citizen Scorecards and surveys to promote good governance and ensure accountability among stakeholders.

Annex III: Interview Questionnaires

Definition and objectives

Q1: What does e-participation mean to you?

Q2: Do you consider e-participation an important tool for policy-making? Please explain.

Q3: How would you describe your overall experience with the e-participation process?

Citizen Input Influence on Policy

Specific Questions Depending on the type of Stakeholder being Interviewed.

E-participation Users	**Government/Service Delivery**	**Non-governmental intermedieries /civil society organization**
Q4: Can you explain what your expectations were prior to engaging in the initiative?	Q4: How does the government use the citizen feedback/input collected through the e-participation process?	Q4: How does the government use the citizen feedback/input collected through the e-participation process?
Q5: Do you have confidence that your feedback/input was taken into consideration by policy makers? Please explain?	Q5: Do you have examples of e-participation initiatives that influenced policy?	Q5: Do you have examples of e-participation initiatives that influenced policy?
Q6: Can you provide an example of how your participation in the e-participation initiative made an impact or influenced policy?	Q6: Is there a government policy/strategy regarding the use of citizen input/feedback in the policy making process?	Q6: Is there a government policy/strategy regarding the use of citizen input/feedback in the policy making process?

Q7: What can be done to magnify the impact of citizen feedback/input on policy?

Method of Obtaining Input

Specific Questions Depending on the type of Stakeholder being Interviewed.

E-Participation Users	**Government**	**NGO/Private Sector**

Q8: How did you become involved in the e-participation initiative?	Q8: What is the medium of engagement used? (Social media/Feedback forms online/E-mail/In-person/Focus groups/A combination?) Q8.1: Why have you chosen this particular medium?	Q8: What is the medium of engagement used? (Social media/Feedback forms online/E-mail/In-person/Focus groups/A combination?)
Q9: What was the medium of engagement with government on the e-participation initiative? (Social media/Feedback forms online/E-mail/In-person/Focus groups/A combination?)	Q9: How do you recruit participants for your e-participation initiative?	Q9: Do you think that e-participation initiatives are inclusive, including of different marginal/under-represented groups?
Q10: Do you feel you were able to fully and objectively share your feedback/input?	Q10: How do you ensure representation, including of different marginal/under-represented groups?	Q10: What in your opinion is the most effective way to collect citizen feedback/input and why?
Q11: After sharing your feedback/input, was there any follow-up regarding the outcomes of the e-participation initiative?	Q11: What in your opinion is the most effective way to collect citizen feedback/input and why?	
Q12: Do you intend to continue using e-participation in the future and why?	Q12: Do you publicize or share the results of the initiative with participants and the general public?	

Government Configurations

Q13: How would you describe your interaction with the government officials/partners facilitating the e-participation process?	Q13: Can you explain how the process of collecting citizen feedback/input is structured and organized?	Q11: Can you explain how the process of collecting citizen feedback/input is structured and organized?
Q14 Did you think the technology/website/platform used allowed for effective e-participation engagement? Please explain	Q14: Please provide information on how the technology platform/website facilitate the e-participation process?	Q12: Please provide information on how the technology platform/website facilitate the e-participation process?

Q15: Did you receive any prior training or information regarding the e-participation initiative?	Q15: Did you provide participants with any prior training or information regarding the e-participation initiative?	Q13: What in your opinion works well and what does not work well in the e-participation process?
Q16: Did you feel like you have sufficient knowledge and information to provide informed opinion/feedback?	Q16: What in your opinion works well and what does not work well in the e-participation process?	Q14: How can the government improve e-participation process and impact?
Q17: What in your opinion worked well and what did not work well in the e-participation process?	Q17: How can the government improve e-participation process and impact?	

Additional Questions:

Is there anything else you would like to add?

Is there anything you would like to ask us?

Thank you so much for your participation!

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