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### **Crisis as a window of opportunity for digital governance transformation: the case of Greece during the Covid-19 pandemic.**

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#### **Abstract**

As the Covid-19 pandemic has been challenging global policymaking since February 2020, scholarly insights have explained varying institutional reflexes and strategic responses among states and drawn implications for future crisis management. Nevertheless, as crises lie on the thin line between threat and opportunity, this paper zones in on the prospects of the Covid-19 pandemic facilitating lasting institutional change. In specific, it studies Greece's ongoing digital governance transformation (2020-2022) through a process-tracing Multiple Streams lens spanning the policy process – from formulation to implementation. The analysis focuses on digitization initiatives in four policy areas – health, education, administrative services, and the economy – and is informed by semi-structured interviews with 17 relevant stakeholders (policymakers, experts, civil servants and professionals). The paper concludes that the Covid-19 pandemic was instrumental in inducing the most wide-scale governance transformation in Greece's modern history. Conditions of crisis generated unique facilitating mechanisms for the promotion and acceptance of a new digital governance paradigm through the continuous scrutinizing of resources and administrative capacity, the enhanced value acceptability of government innovation and the encouragement of cross-sectoral spill-overs during parallel processing. At the same time, they dictated that entrepreneurship could only emerge through the existing governance idiosyncrasies and promoted the favouring of short-term institutional change, posing strains on the completion of structural policy change. The paper further presents implications and future research directions for the Multiple Streams Framework and the Digital Governance scholarship

**Keywords:** Covid-19, Greece, Digital Governance, Multiple Streams Framework, Policy Entrepreneurs, Window of Opportunity, Transformation

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## 1. Introduction

The Covid-19 pandemic has been ‘testing’ state preparedness and challenging policymaking across the globe since February 2020. Scholarship has illuminated the dynamics of effective country responses (Anttiroiko, 2021; Baker, Wilson and Anglemyer, 2020; Yeo and Lee, 2020), provided explanations of diverging state strategies (Zahariadis et al., 2022; Collins, Florin and Renn, 2020) and identified implications for future crisis management (Abdoul-Azize and Gamil, 2021; Khanna et al., 2020; Megahed and Ghoneim, 2020). However, the prospects of the pandemic facilitating lasting institutional change have received limited attention, with emerging relevant research focusing on EU integration and national-level institutional adjustments (Kuhlmann et al., 2021; Schmidt, 2020; Wolff and Ladi, 2020).

As crises both test paradigms and generate opportunities for change, this study intends to contribute to this emerging research agenda and explore the dynamics of governance transformation through digitization, focusing on the experience of Greece during the Covid-19 pandemic. The country has witnessed a surge of digital policy initiatives since 2020, a development that stands in stark contrast to its past. Until 2019, Greece ranked in the lowest level of the European Commission eGovernment benchmark and was defined by a stable and idiosyncratic governance culture characterized by institutional fluidity, centralization, implementation gaps and lacklustre technological and administrative capacity (Karokis-Mavrikos and Zahariadis, 2021; Spanou, 2008; Makrydemetres 1999).

The analysis employs a Multiple Streams lens and brings to light new primary data to explore the drivers and resisting forces which underpin this seeming transformative process in the face of a Covid-induced window of opportunity. The paper first presents developments in the digital governance research agenda, then outlines the analytical logic of the Multiple Streams Framework (MSF) and then applies the framework to the study of policy design and implementation across four sectors: health, administrative services, education and economy and finance. The study establishes that Greece is undergoing a transition towards an envisioned citizen-centric model of services provision through digitization, founded on process simplification, meritocracy, and efficiency. The paper concludes with aggregate insights on the dynamics of change and draws implications for future research.

## 2. Digital Governance

Digital governance has emerged as the latest stage of a three-step transformative process sweeping the state mechanisms of most western democracies since the 1990s. The Information and Communications Technologies (ICTs) first entered government as a remedy to organizational impediments in managing and processing information (Taylor and Williams, 1991). Early ICT influxes mostly aimed at improving intra-organizational workings in terms of efficiency and effectiveness and optimizing the performance of established public administration models (Tummers, Bekkers and Steijn, 2009; Frissen, 1997). However, it was not until the turn of the century that digitization in government became a widescale phenomenon. The development of Web 2.0 and the meteoric rise of e-business technologies inspired a scaled-up, process-oriented redesigning of government organizations under the buzzword of “e-government” (Silcock, 2001). In the e-government era, digitization expanded from the intra to the inter-organizational landscape as new principles of information, participation, transparency, and accountability joined these of efficiency and effectiveness (Bertot, Jaeger and Grimes, 2010; Torres, 2006; Curtin, Sommer and Vis-Sommer, 2003).

While e-government captured the widescale digitization of executive functions, the latest stage of transformation moves past government and concerns the mode of governance. For the purposes of this study, the notion of “governance” is assumed to describe the broader set of the ‘rules of the game’ under which governments, public administrations, organized interests, and citizens interact during policymaking (Fukuyama, 2013). According to Dunleavy and Margetts (2015), the dominant models of governance in place have allowed digitization to emerge as a complementarity but impede its further development. Progressive-era Public Administration (PPA) systems (Hood, 1995), defined by career civil servants and comprehensive processes, synonymize ICTs with machine bureaucracies and large databases for cross-sectoral standardization. New Public Management (NPM) models, defined by the disaggregation of responsibilities and the pursuit of business-like incentivization, favour the outsourcing of technology, thus “stripping digital expertise out of government” (Dunleavy and Margetts, 2015). Digital governance speaks of a transformation beyond the technical dimension of ICT. Ultimately, such transformation transcends the technological optimization, extension or renovation of government functions and rather encapsulates the reestablishment of the aims, processes, and instruments underpinning the state mechanism through the pervasiveness of digitization (Meyerhoff Nielsen, 2019; Misuraca, Pasi and Viscusi, 2018).

Digital governance has given rise to a promising, yet still emerging, research agenda. Scholars have predominantly focused on the principles buttressing this new paradigm, both in a normative and an empirical fashion. Ideal-type models of digital governance speak of networked configurations at the central, local and citizen level, which intrinsically pursue openness, inclusiveness, performance improvement, outcome-over-process functioning, and continuous feedback-based adjustment (Dunleavy and Margetts, 2015; Misuraca and Viscusi, 2015). Nevertheless, both in times of normalcy and in times of crisis, scholarship has viewed digital governance almost exclusively under an evaluative lens (Erkut, 2020; Chen, 2017). In such a rapid transformative process, the crucial component of transformation drivers remains highly underdeveloped. If digital governance is to be viewed as a novel paradigm spanning from the micro to the macro level, it is integral for the study of public policy and administration to understand what enables such a transition and why states exhibit divergent paths towards it. This paper intends to contribute to this emerging but fruitful research agenda. The analysis is not interested in the impact of digitization on the pandemic response but rather intends to examine conditions of crisis as facilitators for digital governance transformation and established governance tendencies as potential impediments to change.

### **3. The Multiple Streams Framework**

A governance transformation consists of a series of institutional shifts that reshape the rules of the policymaking game. To this end, studying the drivers behind the emergence of digital governance demands the joint and comparative study of policy initiatives under the logic of modern public analysis; viewing change as the product of interacting ideas, interests and institutions (Hecl, 1994).

The Multiple Streams Framework (MSF) (Kingdon, 1984) has maintained prominence as a comprehensive analytical toolkit for the study of policy change. The framework's logic is founded on a single central hypothesis: *policy change is the outcome of successful strategizing by policy entrepreneurs to couple three independent and ever-flowing streams (problems, policy and politics) during windows of opportunity* (Kingdon, 1984). Each of the MSF's five structural elements (the three streams, policy entrepreneurs and windows of opportunity) is distinctively operationalized, offering researchers a series of variables to evaluate the facilitating conditions and relative impact of drivers on instances of reform.

First, the problem stream captures the attention-mobilizing mechanisms which may turn "non-ideal" social conditions to political problems. They include policy feedback, changes in

monitored indicators and focusing events (crises, symbols and personal experiences of policymakers). While problems may rise to prominence through any of these mechanisms, their precise definition is determined through the proposed “solutions, which chase problems” according to the MSF logic. Solutions emerge within the policy stream which contains the primeval soup of ideas. Policy entrepreneurs, agents “inside (...) or outside government, but not just looking in” develop ideas into policy alternatives in an effort to define policymaking outcomes. The MSF proposes that value acceptability, technical feasibility and resource adequacy are essential criteria for the survival and progression of ideas within the policy stream. Recent refinements of the framework have stressed the impact of policy communities in the process, with larger and less integrated communities demanding less softening up of alternatives but facing higher deliberation during decision-making. The politics stream captures the political determination to proceed with policy change. Administrative or legislative turnover – especially when paired with ideological shifts –, the national mood and pressure group campaigns are identified as variables facilitating or resisting the development of favourable political climate for reform (Herweg, Zahariadis and Zohlnhöfer, 2018).

Policy entrepreneurs – experts, advisors, civil servants, members of interest groups or politicians – invest their limited resources towards strategic action to couple the three streams. Apart from operating within the policy stream during the development of alternatives, they engage in policy advocacy to manipulate the malleable preferences of policymakers during windows of opportunity. Windows of opportunity emerge mostly at random, either through focusing events (problem windows) or administrative turnover (political windows). During their opening intervals, policy entrepreneurs may employ a variety of strategies – including networking, narrative building, working with advocacy coalitions, venue shopping, leading by example, scaling up change processes etc. – to turn their “pet proposals” to policy outcomes (Mintrom, 2019; Herweg, Zahariadis and Zohlnhöfer, 2018)

A recent meta-analysis by Jones et al. (2015) finds that the MSF has been applied “in 65 different countries, at multiple levels of governance, across 22 different policy areas, and by researchers spanning the globe”. Crucially, the framework exhibits a series of features which render it best-fitted to navigate this paper’s case studies. Compared to the other major frameworks of policy change (most prominently the Punctuated Equilibrium Theory and the Advocacy Coalitions Framework), the MSF lies closest to the epistemological character of chaos and complexity theories (Capano, 2009) and operationalizes institutions only implicitly, minimizing contextual bias in assumptions (Cairney and Heikkila, 2014). While these features

have raised critiques regarding the framework's generalizability and the suitability of its inductive approach in institutionally stable contexts, they turn into strengths for the purposes of this study. Greece has been defined by an idiosyncratic governance tradition, divergent from both PPA and NMP models and characterized by institutional fluidity, highly politicized public administration, intense centralization and informal interactions between the government and organized interests (Mavrikou, 2021). Conditions of crisis have only been shown to propagate such tendencies (Zahariadis and Karokis-Mavrikos, 2021). As a result, the MSF-driven analysis is uniquely suited to navigate the drivers behind the emergence of digital governance in Greece during pandemic times.

#### **4. Research Design**

This paper intends to examine the dynamics of governance change through digitization during a window of opportunity instigated by the Covid-19 pandemic. It explores the case of Greece, where stable governance patterns have long served as a source of major resistance to structural change across policy sectors. Notoriously, modernization efforts of the past— e.g., the socialist PASOK party's NPM agenda between 2000 and 2004 – have faced opposition by established interests in the short-run and have left faint legacies in the long-run (Spanou and Sotiropoulos, 2011). Moreover, digital state infrastructure has historically been rudimentary, (European Commission, 2019). Viewed as a success story in the early stages of the Covid-19 pandemic (Schismenos et al., 2020) and having experienced unprecedented numbers of digital initiatives since 2020, Greece provides an ideal case study to uncover the potential causal drivers of digital transformation and frame the impact of crisis conditions on the process.

Drawing on the insights of the literature on digital governance and the Multiple Streams Framework, the analysis tests two categories of hypotheses: facilitating and resisting. The hypotheses are formulated through the logic of the Multiple Streams framework and seek to pinpoint how contextual conditions amidst crises facilitate or impede successful policy entrepreneurship for digitization. To this end, the Covid-19 pandemic is incorporated as an intervening variable, allowing the analysis to extract conclusions on how windows of opportunity driven by focusing events buttress policy advocacy and implementation.

H1: Facilitating

- A) Deficiencies in administrative capacity, highlighted by conditions of crisis, increase the likelihood of successful policy entrepreneurship for digital governance transformation

- B) Value acceptability for governance innovations, enhanced by conditions of crisis, increases the likelihood of successful policy entrepreneurship for digital governance transformation
- C) Cross-sectoral spill-overs, facilitated by conditions of crisis, increase the likelihood of successful policy entrepreneurship for digital governance transformation

## H2: Resisting

- D) Reliance on established policymaking instruments and processes, promoted by conditions of crisis, decreases the likelihood of successful policy entrepreneurship for digital governance transformation
- E) Short-term institutional change, imposed by conditions of crisis, decreases the likelihood of successful policy entrepreneurship for digital governance transformation

To test the hypotheses, the analysis employs a process tracing approach (Beach, 2016), guided by the Multiple Streams Framework and covering the period from February 2020 to April 2022. It evaluates, both jointly and comparatively, developments in digitization across four major policymaking areas: health, education, administrative services, and the economy. As scholarship has shown, the selected policy sectors rank among the most highly impacted throughout the ongoing pandemic – especially under lockdown regimes (Rathee et al., 2020; Coccia, 2020; Auray and Eyquem, 2020). The analysis is informed by primary sources: legal documents (bills, parliamentary proceedings, and implementation guidelines) and semi-structured interviews with 17 relevant stakeholders across the four policy areas. Interviewees range from policymakers to experts, civil servants and professionals. Through this unique dataset, the paper captures all essential dimensions for the study of digital governance transformation drivers and barriers: ideational deliberation, policy entrepreneurship, institutional change and implementation attitudes.

## **5. Policy Formulation and Decision-Making**

### **5.1 The Problem Stream**

When the World Health Organization declared Covid-19 a global pandemic on March 11, 2020 (Cucinotta and Vanelli, 2020), Greece's level of preparedness was immediately put to question. Having just exited a 10-year economic recession under a regime of financial supervision (Oikonomidis, 2018), the country faced cross-sectoral resource inadequacies (Karokis-Mavrikos and Zahariadis, 2022). Even in highly evidence-based fields such as health policy,

indicators and policy feedback never managed to emerge as strong attention mobilizing mechanisms; a by-product of suboptimal governance culture itself. As a result, it was predominantly focusing events bringing problems to light, triggered by the pandemic's emergence and the new lockdown reality. "Before we even had the first Covid-19 related death in Greece, I had made the quick personal decision to proceed with a strict lockdown" shared Prime Minister Mitsotakis.

In the health sector, the area under most imminent threat during a pandemic outbreak, recent hospital budget cuts had merely added to a series of long-standing pathologies: a lack of an established primary healthcare system, a medicine-centric approach to public health, weak and heavily politicized advisory instruments, intense centralization and rudimentary disease monitoring mechanisms (Kyriopoulos and Telloglou 2019; Sissouras, 2012). With Covid-19 emerging as a "virus we knew very little about but also one whose early transmission-mortality profile pointed to long term survival and spreads", monitoring deficiencies immediately raised significant concerns for the disease's macro management (interview with Rector of the National and Kapodistrian University of Athens, Professor of Medicine Athanasios Dimopoulos). In Greece, there has been a dedicated epidemiological surveillance instrument since 1992. The National Centre for Disease Control and Prevention (KEELPNO) (Law 2071/1992), now National Organization for Public Health (EODY) (Law 4600/2019), has been designed to operate in unison with the NHS, administrative authorities, and expert institutes for the profiling, evaluation and assessment of the Greek population's quality of health.

Nevertheless, insufficiencies and discrepancies in monitoring manifested overtime through three pervasive tendencies. First, cases of infectious diseases were only registered after a secondary care diagnosis, i.e., hospitalization. "In Greece, we never developed a primary care culture; our National Health System tends to operate vastly different than the British NHS model" informed a health policy expert and member of the National Vaccination Committee. With no culture General Practitioners (GPs) acting as gatekeepers to secondary services, no consistent testing by regional authorities and no mechanisms to self-report infections, registered cases were limited to hospital-bound patients, leading to highly inaccurate epidemiological insights. Second, the lack of universally accessible and regularly updated personal patient files restricted the availability of data on chronic diseases and comorbidity threats. Last, the registration of vaccinations in individually held, hard-copy health cards never allowed the collection of comprehensive coverage data, posing a strain on the eventual demands for universal Covid-19 vaccination coverage. Faced with a rapidly spreading virus



and exhibiting subpar hospital capacity – with 5.2 ICU beds per 100,000 population, less than half of the OECD-22 average of 12 beds per 100.000 (OECD, 2020) – developing infrastructure for the tracking and registering of Covid-19 cases outside hospitals quickly became a pressing necessity for Greece.

Meanwhile, the strict lockdown in place since March 23, 2020, was surfacing further challenges generated by the country’s overreliance on secondary care services. “Hospital overcrowding and the public’s hesitance to visit doctoral practices was impeding diagnoses, check-up referrals and prescriptions – problems which were especially prevalent to chronic patients” stressed a primary care specialist. An e-prescription system had been in place since 2014 (Ministerial Decision 70521/2014) but was operated only by a small user base. Lacking an automated control mechanism, state capacity in controlling pharmaceutical spending had long been lacklustre, “with both doctors and pharmacists having engaged in inflating reimbursement requests” (interview with health economics expert). During times of crisis, when resources are scarce and precious, financial sustainability rises to prominence.

Beyond the health sector, the Covid-19 pandemic further imposed extraordinary circumstances in the functioning the state mechanism and the country’s social life. Communication between the government and citizens had to rely on timeliness and efficiency. Set on a long-term lockdown strategy, the Greek government faced challenges in enforcing compliance to a “traditionally disobedient Greek public” in the short run (interview with Professor of Health Economics and Social Policy John Yfantopoulos) and achieving a harmonious phasing-out process in the long run. Demanding intersectoral horizontal management, the pandemic further called for the Greek state to address pathogenies in process complexity, coordination and jurisdictional conflict between departments and authorities. Last, the pervasiveness of the physical-based services culture was generating uncertainty among citizens regarding the fate of administrative continuity. “Going from department to department to collect documents and permits epitomizes the Greek public’s experience with administrative services” (interview with experienced local government civil servant). With slowness and inefficiency being frequent tendencies even in times of normalcy, the ability of the state mechanism to avoid disruptions was highly questioned during the emerging crisis.

In the economy, prevalent problems exceeded governance. Greece’s financial sustainability faced consequent blows by the decade-long financial crisis, the outbreak of pandemic and the prolonged business closures brought by the lockdown. Nevertheless, containing the in-person

interaction during business-to-business and business-to-state relations and ensuring compliance with guidelines to prolong an eventual reopening appeared pressing necessities for the successful macro-management of the pandemic. Hospitality raised major concerns regarding compliance, with the sector having proven resistant to enforce policies in the past – most notably anti-smoking regulations (Vardavas and Kefatos, 2007) – and state capacity for monitoring having proven inadequate. Furthermore, banking exhibited similar tendencies to administrative services. Despite shifts to digitization since the mid-2010s, the in-person payment of bills, opening of accounts and updating of documentation remained common practices. “Going to the bank had always been a day’s visit, a social outing of sorts. This is something we had not managed to do away with before the pandemic” described a commercial bank manager. Containing physical transactions was integral both for mitigating the spread of the disease and for maintaining the flow of operations in an essential sector under extraordinary circumstances.

Last, in the educational sector, the closure of all schools and universities on March 10, 2020, and the uncertainty surrounding the timeframe of their reopening surfaced long-standing problems of inequalities, resources and coordination. A transition to distant learning needed to address poor IT literacy for many students and educators, lack of access to reliable equipment and the internet by many families and a traditional teaching culture, founded on lecturing and exam assessments. Moreover, the Ministry of Education’s notorious rigidity in communicating with educators, sharing support and best practices and updating curriculums according to emerging needs was propagating distrust towards a sustainable transition. Last, the potential further empowerment of the educational support sector in a country where tutoring practices had long been considered an essential complementarity for eventual university applicants was posing a long-term threat to the educational paradigm, if schools did not manage to cope with the demands of the new reality.

Ultimately, in the problem stream, the focusing event which triggered the opening of the window of opportunity for reforms – the Covid-19 pandemic –brought to light, simultaneously, problems across sectors. Common problematic conditions included low administrative and enforcement capacity, process complexity, outdated infrastructure and ineffective coordination and communication. Last, even seemingly pandemic-specific problems, such as enforcing lockdown rules and ensuring compliance with guidelines in hospitality, quickly became intertwined with deeper governance issues raising prospects for meaningful, rather than merely ephemeral, change.

## 5.2 The Policy Stream

“In 2019, we came to power with an ambitious digitization agenda. What the pandemic did was turn the Ministry of Digital Governance (MoDG) from a merely strategic instrument to a leading operational branch of the Greek government” (interview with Minister of Digital Governance Kyriakos Pierrakakis). During the period of study (February 2020 to April 2022), 455 digital initiatives were introduced in Greece, with another 145 being listed as ongoing according to the Official Digital Transformation Guide. In driving this process, both policy entrepreneurship and alternative formulation showed unique features for Greek policymaking standards.

Among the four sectors under study, the renovation of administrative services provision was most closely tied to the programmatic agenda of the governing New Democracy party, which assumed power in July 2019. “Turning Greece to an executive state was the legacy we promised to leave from the day we got elected” stated Prime Minister Kyriakos Mitsotakis, with Minister of Digital Governance Kyriakos Pierrakakis adding that “a citizen-centric administrative system remains our five-year vision”. In the highly centralized Greek governance culture, it is far from uncommon for policy entrepreneurship to be chiefly exercised from senior members of government. Nevertheless, with the pandemic tightening decision-making timelines and imposing necessities for parallel organizational processing, the common practice of ad hoc reform design committees during policy formulation (Mavrikou, 2021) was replaced by the mobilization of formal, previously neglected administrative instruments. Ultimately, the responsibility for developing policy proposals for the new Greek public administration was shared between the senior staff of the MoDG, “operating in a horizontal hierarchy model”, the National Network of Technology and Research Infrastructure (EDYTE) and the General Secretariat of IT Systems in Public Administration (interviews with Minister of Digital Governance Kyriakos Pierrakakis and digital governance expert, Professor of Software Engineering Diomidis Spinellis). While still exhibiting a top-heavy concentration of powers, the meaningful involvement of dedicated institutional instruments which had the expertise and knowledge to produce relevant policy alternatives presented a coup in the design process, allowing long-term and large-scale reform planning.

Underpinning the new-look administrative services policy program was the development of a ‘Unitary Digital Gate’. Seeking to establish a one-stop-shop for the citizens’ informational and administrative needs with a consistent user-friendly interface, the Greek government introduced the *gov.gr* web hub on March 21, 2020 (originally legislated under Law 4635/2019).

Gov.gr allows users to navigate between the interconnected web pages of Ministries, Secretariats, departments and public organizations and access 1398 unique services, much to the example of gov.uk, which has successfully been in operation in the UK since 2012. Verification for the issuing of documents and the submission of requests is homogenized through unique individual codes. Furthermore, where interpersonal interaction was deemed irreplaceable, tele-service systems – mostly in video-call format – were introduced to accommodate for lockdown circumstances – again through an umbrella interface and still within the gov.gr hub. Characteristically, the obtaining of a Tax Identification Number (TIN) was made possible through ‘myAADElive’ (Ministerial Decision 49926/14976), benefits’ applications and social security and pension queries were handled through ‘myEFKAlive’ (Ministerial Decision 52108/2021), document and licensing issues were processed through ‘myKEPlive’ (Law 4704/2020), and property permits and registrations were dealt with through ‘myKTIMATOLOGIolive’ (Law 4759/2020). Meanwhile, in a bid towards process simplification – both in the inside workings of public organizations and in citizen-state interactions -, a National Registry of Processes was designed, allowing citizens, government members and civil servants to map out the prerequisites for delivering and receiving services as well as estimate their costs (Law 4727/2020). Last, leaning into the ability of digitization to induce uniformity, a no-charge codified phone messaging system was developed for citizens to inform the government on necessary movements during lockdown, covering for lacking enforcement resources.

In health, ideas for developing flagship initiatives extended the MoDG’s branches. “Digitizing prescriptions and patient records had been in the agenda of the Ministry of Health and EOPPY (i.e., the National Health Payer) for more than a decade” stressed a senior EOPPY official. “The bid towards digitization was first introduced in the early 2010s, during the years of financial supervision, as a way to combat unsustainable and inflated reimbursement and control pharmaceutical spending” added a member of the National Vaccination Committee. Alternatives addressing long-standing governance deficiencies had been in various stages of development in the past – e.g., the introduction of an e-prescription system of limited scope in 2015 – but had lacked community-wide value acceptability by established interest groups – e.g., pharmacists abusing lacklustre control mechanisms – and, crucially, technical feasibility. Shifting entrepreneurship to the MoDG did not come without conflict. “Health policymaking instruments sometimes faced a *fait accompli*” stated the senior health advisor to the Prime Minister and former Deputy Minister of Health Vassilis Kontozamanis. Nevertheless, with

swiftness and watered-down resistance, the government designed and introduced a series of new digital systems. They included a Covid-19 guidelines hub in the new gov.gr EOPY website, a comprehensive Covid-19 infections and vaccinations registry (Emergency Legislative Decree 75/A/30-3-2020), a vaccination appointments portal, a new digital prescription system including automated renewals for chronic patients and check-up referrals (Law 4704/2020) and digitized patient files, including medical history records and reimbursed prescriptions, accessible in an app format (Law 4600/2019).

Finance and the economy saw the highest involvement of the private sector in efforts for digital transformation. “Following international developments, Greek banks were exhibiting modernization tendencies. However, we were witnessing a two-gear reality. Traditional, “systemic” banks were appearing highly rigid in their practices but new players to the sector showed clear preference for a highly digitized business model” informs a senior Greek bank executive. Ultimately, the flagship ‘Know Your Customer’ initiative was designed with the consensus support of the Greek financial institutions. It provisioned the digitization of all interactions between banks and citizens concerning work, income and tax data as well as identification documents, “eliminating bureaucracy, paperwork, time wastefulness and the need for physical presence [in such transactions]” (interview with Minister of Digital Governance Kyriakos Pierrakakis). As Prime Minister Kyriakos Mitsotakis stated in the program’s official presentation in May 2021, “it starts with banks, but we hope to soon extend ‘Know Your Customer’ to businesses” (ERT Newsroom, 2021).

The private-public partnership forged in the banking sector inspired further management initiatives as the pandemic unfolded. In an effort to increase vaccination coverage among the young, the government introduced the “Freedom Pass” for citizens aged 18 to 25 (Ministerial Decision 5703/2021); a digital wallet of 150 euros in Viva or Alfabank (two Greek financial institutions), available to spend in associated businesses including Greek sea and air travel providers. Furthermore, the reopening of retail and hospitality was designed to begin with business involvement in enforcement. Digital health certificates ensuring privileges for the vaccinated were to be checked and registered through a designated app by businesses, which would face disproportionately higher fines than violators in the case of violations (Ministerial Decision 66436/2021). Similarly, a mandatory shift to digital invoices was incentivized by financial penalties and invalidations for handwritten transactions, seeking to contain physical interaction and eliminate unsubstantiated income claims.

Last, in education, tendencies of delay and disjointed initiatives came to be the norm, especially during the first year of the pandemic. With uncertainty surrounding the timeline of return to in-person attendance, no homogenized system for digital learning was developed. Responsibility largely fell on educational institutions for the 2020-2021 school year. “Private schools and higher education institutions predominantly opted to use Microsoft Teams as the digital teaching platform”, while “public schools were handed access to government bought Webex licenses” (interviews with high school teacher and university professor). Crucially, in contrast to the other three sectors under study, policymaking remained limited to band-aid solutions. There was no development of alternatives towards universally digitizing educational resources, no proposed plan for adjusting curriculums to suit online learning, no switch to online exams and little government initiative to combat inequalities in student access to technology. “Teaching associations, schools and universities raised such issues from the start, individually and collectively. However, responsiveness and political determination were low” (interview with representative of regional schoolteachers’ association). Instead, it appeared clear from the start that “the Ministry of Education wanted to minimize dependency on distance learning as much as possible”, as epitomized by the decision to prohibit schools and undergraduate university courses from accepting virtual attendance in the 2021-2022 school year (interview with university professor).

Overall, the policy stream elucidates the dynamics inducing Greece’s reformative frenzy towards digitization. First, top-level policy entrepreneurship emerged as integral in kickstarting a digital governance shift through successive responses to the pandemic’s administrative challenges. “Ultimately, among other factors, it boils down to the right person being in the right place at the right time [i.e., MoDG Minister Kyriakos Pierrakakis]” highlighted a senior civil servant. While a governance transformation constitutes the potential outcome of a process of policy change, the process itself is always instigated within the existing governance paradigm. Strong leadership and the concentration of powers in the MoDG allowed the quick communication and execution of ideas in Greece’s traditionally centralized and highly politicized policymaking system.

Second, developing through and around the *Unitary Digital Gate* strongly highlighted the importance of technical feasibility in pursuing change during crisis. Under extraordinary circumstances, ideas are judged on swiftness of technical development and implementing potential. While, for example, the original idea for a digital services hub was inspired by international trends, doubling down on the initiative was driven by the demands of the crisis.

As Minister of Digital Governance Kyriakos Pierrakis categorically stated: “The pandemic drove spill-overs. Every time we developed a new tool, we always evaluated where else we can apply similar technology and deliver similar solutions”. In a country where “outsourcing the development of both hardware and software government systems had been common practice” and where “questionable selection criteria had led to systems being rarely compatible with one another, even in the same line of work” (interview with veteran civil servant), design consistency accelerated the spread of new technologies in an unprecedented pace.

Third, resource adequacy and value acceptability showed interconnectedness in their workings within the policy stream. As the immediate challenges posed by the pandemic concerned resources, the unique ability of digitization to improve state performance quickly and efficiently enhanced the acceptability of new governance habits under a climate of collective urgency. Last, the observed discrepancies between the four sectors under study capture the interdependency of policymaking between normalcy and crisis. In both health and finance, existing groundwork was prominently used. On the other hand, in sectors like education where centralized entrepreneurship in the circles of the Ministry pushed for isolated and ephemeral emergency policymaking, reforms proved limited and disjointed.

### **5.3 The Politics Stream, the Window of Opportunity, and the Coupling Process.**

In line with the paper’s argument, the window of opportunity for a digital governance transformation opened in the problem stream with the outbreak of the Covid-19 pandemic. However, political determination to proceed with digitization proved crucial for the institutionalization of widescale digital initiatives. “We have successfully contained the first wave of the pandemic, but our digital transformation is still ongoing and remains at the top of our priority list” stressed Prime Minister Mitsotakis.

The extraordinary circumstances of the pandemic adjusted the rules of the decision-making process. In Greece, it is common for agenda-setting and policy formulation to occur simultaneously and for decision-making to demand limited parliamentary deliberation due to an informal softening up taking place during the design stage (Mavrikou, 2021). However, pandemic policymaking synchronized the three processes even further. Especially during 2020, emergency conditions and lockdown restrictions enabled the adoption of policies through Ministerial Decisions, with reforms being voted in parliament at a later date, in a package deal format. Although the New Democracy government enjoyed a single-party parliamentary majority, the new decision-making circumstances eliminated any substantial competition from

the opposition. Meanwhile, the impact of public mood – the other variable of the politics stream – was also neutralized as the rapidness of policymaking transferred any opportunity for reaction to the implementation stage. Last, as dealing with the crisis monopolized political priorities, the typically high involvement of the senior political leadership in most policymaking initiatives expanded even further. The Greek Prime Minister had a direct say in the development and introduction of policy programs, ultimately turning into a facilitator of a digital governance transformation.

Political determination took multiple forms. Isolating organized interests and aligning digitization with the notion of the executive state facilitated progress in the circles of the government and the policy community. “There were reactions from time to time from our Education and Health units regarding the MoDG taking unilateral initiative” informed a senior government official. Nevertheless, they were contained by the leadership’s consistent line towards digital expansion. Moreover, political shifts preceding the pandemic acted as enablers by reshaping the balance of power. The Ministry of Digital Governance was assigned the supervision of instruments which played a leading role during reform design – such as the National Network of Technology and Research Infrastructure (EDYTE), the General Secretariat of IT Systems in Public Administration and the Citizen Service Centres (KEP). The organizational restructuring reflected the Ministry’s governance mandate and provided it with jurisdictional capacity to carry forward cross-sectoral policy initiatives.

All in all, policy formulation and decision-making produced stream convergence towards a digital governance transformation as a series of policies were introduced to redefine the aims, processes and instruments underpinning the state mechanism through digitization. Among sectors, the couplings showed variance in both causal mechanisms and policymaking volume and in some cases, like education, precluding the involvement of expert entrepreneurship impeded the emergence of potentially structural reforms. However, as the Greek experience had long showed, merely legislating initiatives remains far from transformative change. Rather, it is integral for the stream coupling to persist during the implementation phase.

## **6. Policy Implementation**

During policy implementation, focus shifts to whether stream convergence is maintained, preserving the nature and magnitude of change established during design. Analytically, the policy and the problem streams become highly interrelated. In an ideal-type policy program, the adopted solutions successfully fulfil their intended aims and address the previously



identified politically problematic conditions. However, the progression of policymaking often proves more intricate. The executive dimension of policy programs tests technical feasibility, value acceptability and resource adequacy in practice. Moreover, entrepreneurship transfers from the policy to the politics stream as political determination to comply and adjust to new demands can minimize and contain stream divergence.

### **6.1 The Problem and the Policy Stream**

The implementation phase of digitization initiatives in health saw the increasing acceptance of digital governance by the public. The introduction of the new digital prescription system rapidly accumulated users, as lockdown restrictions and widespread fear during the pandemic's first wave made patients – especially chronic– avoid clinics, doctor practices, and hospitals when possible. “Down the line, the citizens registered in the digital prescription system were automatically notified about booking vaccinations, with patients having renewable prescriptions for chronic diseases given priority” informed a member of the National Vaccination Committee. The nature of the crisis turned health into the exemplary policy area for the operation of the new governance paradigm. Similar to how the spill-over of technologies facilitated policy design, value acceptability for virtual, citizen-centric interactions kept growing among the public as new systems succeeded one another.

Nevertheless, shifts in governance practices were not analogous across implementing agents at all levels. Although initiatives such as the digital prescription system successfully met technical demands and addressed emergency challenges posed by the pandemic, they have yet to combat deeper systemic problems, such as the containment of the inflated health reimbursement budget. “Unique serial numbers for medicines exist but are neither disseminated to pharmaceutical companies to control and forecast supply needs nor are used to prevent parallel exports” informed a Ministry of Health staffer. “Since digital prescription, the ability to request unsubstantiated surplus reimbursements has merely been transferred to the hands of doctors from these of pharmacists” pointed EOPPY official, while adding that “pharmacists still enjoy control over whether to register transactions for frequent-use medicines which do not require prescription”. Achieving technical feasibility and resource adequacy through digitization has proven sufficient to carry forward strictly administrative reforms such as the establishment of a Covid-19 patients and vaccination registry. However, in policies which demand the compliance and coordination of actors at both the central and the street level, installing value acceptability throughout the implementation process emerges as necessary for a digital governance shift. Ultimately, without effective command-and-control mechanisms for

comprehensive and accurate digital records, the legacy of the pandemic's renovative frenzy may be significantly undermined.

In the case of administrative services, the implementation trajectory has predominantly faced obstacles due to considerable digital illiteracy among both civil servants and the public. As outlined in the problem stream during the design stage, the Greek administrative services paradigm repeatedly rejected NPM-inspired modernization influxes in the 2000s and had remained highly anachronistic in terms of technological capacity. "Most departments still run outdated versions of Windows, software is rarely updated, interfaces are incompatible with one another and the civil service, for the most part, lacks the necessary digital competence" highlighted a veteran civil servant. So far, it has been an "adapt or die" scenario added a regional government staffer. Public administration personnel, despite any discontent, avoided an organized reaction, driven by a sense of emergency duty and by job security worries. However, adaptation was not facilitated through any form of government-provided training. Rather, "departments were sent sizeable guideline booklets on the day a new initiative was introduced" and colleagues guided one another through the learning process (interview with veteran civil servant). Meanwhile, technical support was also predominantly delivered in an internal, makeshift fashion. "You could send an official complaint or inquiry to the Ministry [of Digital Governance], but responsiveness would depend on the magnitude of the issue. In cases where multiple departments would report the same problem, a central update would be shared. Otherwise, you just had to ask around, in your department or in another" (interview with administrative services manager).

Beyond the civil service, a large proportion of the public – the very core of a citizen-centric model of digital governance –, remains ill-equipped to follow the transformative process. In 2020, levels of digital illiteracy among the Greek population reached 30% (Tsekeris et al., 2020). "There seems to be a very strong positive correlation between not having attended higher education and digital illiteracy; and this is not limited to the old" further informed regional government civil servant. Paired with the lack of universal access to digital devices, in a country where 68.3% of the population falls around or below the poverty line (OECD 2020), inequalities in accessing the new state mechanism severely impede a governance shift and produce externalities in the form of social divisions. Indeed, similar exclusionary situations were observed in the booking of vaccinations, "with relatives and pharmacists aiding about 1/4 of the Greek population in securing their appointment" (interview with member of the National Vaccines Committee). The prospects of social isolation for a distinct subset of the population

were masked under the climate of solidarity during the pandemic's first wave. However, "local Citizen Service Centres soon started receiving frequent requests for physical copies of vaccination certificates so the digitally illiterate would not be denied access in retail and hospitality services" (interview with veteran civil servant). More importantly, private accounting services have been experiencing a boom in clients "as people call us for tasks as simple as a signature verification" (interview with accounting practice manager). A "secondary market" of administrative services is shaping up with the involvement of the private sector, setting a dangerous trajectory for governance and questioning the extent of transformation.

In the economy, the high involvement of non-state actors in the implementation process induced rapid adaptation. However, considerably different mechanisms were used to ensure compliance, hinting at inconsistencies in the intended governance transformation. In banking, the 'Know Your Customer' project is still under development while accumulating users. "Although yet to offer major outcome-based benefits, 'Know Your Customer' – and the 'Freedom Pass' collaborative effort – served as informal guarantees that the Greek government would support the digital advancement of the banking sector, incentivizing banks to innovate while knowing public infrastructure will facilitate rather than impede their efforts" (interview with bank manager).

In contrast, the involvement of retail and hospitality workers in the enforcement of Covid-19 protection measures was driven by strong prospective penalties. As opposed to breaches of mask-wearing or social distancing in public transport or spaces, guideline violations in privately-owned businesses penalized owners, rather than misbehaving clients, with the highest fines. "Ultimately, admitting the lacklustre monitoring capacity and taking advantage of digital health passes, the state passed over responsibility – and risk – to business owners" (interview with board member of Attica Association of Restaurant and Relative Businesses Owners). Building-up administrative capacity during crisis is a fundamentally challenging task. Digitization can both facilitate this process and mask deficiencies allowing governments to avoid more structural reforms. As opposed to the former, the latter may impede a digital governance shift.

Last, in education, the non-involvement of specialized digitization instruments in policy formulation manifested implementation discontinuity. Characteristically, the government-sponsored Webex platform "faced daily technical issues which the centralized support services were unable to accommodate timely" (interview with high school teacher from Athens, Greece)

and even led to the reprimanding of the Ministry of Education by Greece's Independent Authority on the Protection of Personal Data, for violating anonymity and disseminating user information to the platform's developers, Cisco (Decision 50/2021). Inertia and ephemeral solutions by a non-cooperative Ministry of Education defined the operation of distant learning, leaving inequalities in access unaddressed, failing to monitor classroom attendance for the 2019-2020 academic year and still proceeding with in-person exams under a general lockdown. Meanwhile, across all levels of education, "there remains no wide-scale legacy in digital learning technologies, modes of teaching or new digital platforms" stressed university professor). Even higher education teachers "who saw the online classroom as a facilitator for lecture attendance" (interview with university professor) were prohibited from delivering any virtual undergraduate modules for the 2021-2022 academic year (Ministerial Decision 119847/2021). The workings of the educational sector highlight that no matter the easiness and pervasiveness of technological spill-overs, as long as existing governance patterns are maintained and reinforced during policy design the prospects for transformative policy outcomes are minimal.

Overall, across the four sectors, the prolonged window of opportunity proved instrumental in allowing value acceptability for the new digital governance paradigm to flourish not only among the central government but also among civil servants and the public. The survival of prevailing governance cultures largely lies in their ability to be heavily engrained in the behaviour of citizens and serve as operational frames for any state-related interaction. Delimiting the potential of reverting to traditional modes of governance across most sectors forced Greeks to comply with the new policies and gradually build acceptability towards the new policymaking style. The divergence observed in the educational sector reinforces this conclusion; where novelties were treated as ephemeral emergency disruptions, value enforcement during implementation was minimal and resistance rather than embracement prevailed.

Resource adequacy was instrumental for the survival of digital transformation ideas in the policy stream during policy formulation as digital systems offered seemingly costless remedies to numerous resource-related challenges. During implementation, this comparative advantage proved more nuanced. Operating the new systems was personnel lacking sufficient training, equipment, expertise and guidance. Meanwhile, the universality of digitization allowed transfers of responsibility to cover for resource inadequacies without addressing them. In the case of health, digitizing prescriptions seemingly automated reimbursement controls, but

ultimately maintained reliance in a different set of agents practicing in good faith. In the case of hospitality, the sector faced undesired externalities as it was forced to assume a policing role.

Inconsistencies in the policy stream between design and implementation shaped problems. Interestingly, the cross-sectoral failures in delivering technical support hint at the low receptiveness of feedback; a long-standing governance pathogeny as outlined in the design stage. The centralized model of policy design proved effective in getting new systems up and running in quick succession but left the street-level isolated during implementation. Most prominently, the implementation phase surfaced problems of digital illiteracy and social exclusion. Digital illiteracy stands as a crucial impediment to a citizen-centric model of public services and may only be addressed through long-term policymaking, extending beyond the pandemic. As the pandemic experience showed, it poses a short-term threat of excluding parts of the population from receiving services and giving rise to secondary private markets – most notably through accounting – as the digitally illiterate seek to carry out their required interactions with the state. Last, process simplification, a central intended goal of Greece’s digital governance transformation remains an outstanding challenge. “Collecting and submitting multiple documents online as opposed to in-person addresses only part of the problem. Stripping down the administrative processes to the bare necessities is the crucial next step and significant progress remains to be made” categorically stated Professor of Software Engineering Diomidis Spinellis.

## **6.2 The Politics Stream**

Political determination remained consistent, especially as the implementation phase of many initiatives coincided with the design phase of others under conditions of emergency policymaking. However, contrary to typical Greek governance tendencies, the incremental implementation approach was carried out as provisioned. Legislating policy programs but scheduling their implementation for the long term – when administrative capacity reaches adequate levels – has been a commonality across Greek policymaking, leading to lasting implementation gaps. In the case of digital expansion during the Covid-19 pandemic, this did not turn out to be the case. The digital prescription system in 2020 was complemented with the ‘MyHealth App’ in 2021 and digital patient files in 2022, tele-services such as ‘myEFKAlive’ kept being expanded to reach new regions over a 12-month period and initiatives such as ‘Know Your Customer’ and digital invoices entered the implementation phase after a fiscal-year-long adjustment timeframe. The five-year transformation horizon which underpins the

Official Digital Transformation Guide has so far appeared meaningful, as epitomized by the leadership's decision not to proceed with changes in personnel in the MoDG during the 2021 government reshuffling. While administrative and legislative turnovers may open windows of opportunity for policy formulation and decision-making, they are likely to impede long-term implementation. In the case of Greece's digital governance transformation, stability has facilitated consistency in progress

Organized pressure group attitudes showed high interdependence with central coordination. In banking, involvement in the policymaking process turned the sector to a strong supporter of the government's policy program. In education, mismanagement and isolationism sparked hostility from school and teaching associations. Due to the nature of change, attitudes among civil servants also emerge as important in the political stream during implementation. "Resistance was cultural, and the pandemic helped water it down" declared Minister of Digital Governance Kyriakos Pierrakakis. However, despite adaptability driven by emergency, the limited central planning to induce a cultural shift, problems with support and guidance and the communicative distance between the central and the street level question whether the operational branches of the state will maintain equal levels of political determination during implementation in the long-run. So far, across all sectors and groups, reaction and hesitance has been overcome by the pervasiveness of the pandemic's management in the political agenda. As the return to normalcy nears, the political stream's momentum will be tested.

Last, national mood during implementation co-fluctuated with trust. The management of the pandemic's first wave, where daily cases never exceeded 156 and daily deaths never exceeded 10, revitalized trust to the government for Greeks after over a decade of disbelief (EODY, 2020). Higher trust brought confidence that the agenda for a meritocratic, less bureaucratic, efficient, and automated state was not another instance of smoke and mirrors but a credible promise. However, the rapid rise in cases after the mass opening up during the tail end of summer, the inconsistencies in guidelines, the delays in monitoring and the overbearing pressure facing the NHS decreased trust levels and produced snowball effects in public attitudes. Like in the case of public administration, the national mood vis a vis digital governance remains to be evaluated in times of normalcy. Addressing issues of social exclusion will likely prove integral for achieving embracement.

## 7. Discussion – Conclusions

Since 2020, Greece has been undergoing the largest cross-sectoral wave of reform in public services' provision during its recent history. Crucially, the array of digitization since the beginning of the Covid-19 pandemic has challenged the policymaking mode of the Greek state and has set a unique path towards digital governance transformation. In this paper, the study of policy change from formulation to implementation under a Multiple Streams lens across four policy sectors uncovered the facilitating and resisting forces behind the transformative process. As such, it offered valuable insights for the literature on policy change and digital governance.

First, the continuous scrutinizing of resources and administrative capacity imposed by the prolonged conditions of crisis generates increased momentum for digital governance policy entrepreneurship, confirming H1A. Underpinning the causal mechanism are technical feasibility and resource adequacy. Digitization allows the delimiting – and even the elimination– of deficiencies in the state mechanism while demanding little building-up in resources and organizational structures, especially during the design phase. Crucial to the transformative process remains the emergence of policy entrepreneurship. However, the substantive comparative advantage of easily and quickly implementable systems decreases the need for complicated strategizing on behalf of advocating entrepreneurs.

Second, the value acceptability of government innovation, enhanced by the urgency of crisis management, enabled the widescale embracement of a new digital governance paradigm, confirming H1B. This applies to all levels; the government, the civil service, and the public. At the top, welcoming innovation was instrumental for policy entrepreneurship to avoid a softening-up process which could contain the magnitude of change. For implementing agents, assimilating the new governance principles was essential for a change in culture. For the public, viewing change as necessary for crisis containment induced familiarization and facilitated the transition to the citizen-centric approach of digital governance. Crucially, as the analysis illustrated, although crisis conditions build up value acceptability, sustaining it demands targeted action; either through leading by example or through incentivizing and penalizing.

Third, the parallel processing demands of crisis encouraged cross-sectoral spill-overs, facilitating the expansion of digital governance, confirming H1C. By definition, a governance transformation speaks of change sweeping the state mechanism. The transferability of digital infrastructure allows its quick expansion when sector-based resistance is contained thanks to emergency policymaking. This is particularly prevalent in the decision-making stage where

organized groups often hold significant veto power and can infiltrate the political leadership. Crucially, the replication of digital systems, promotes not only the institutionalization of new processes but the deeper engraining of new principles, aims and intended outcomes.

Fourth, the exercise of policy entrepreneurship through the established policymaking process and by established policymaking instruments still allowed the advancement of a transformative agenda but proved prone to maintaining cultural idiosyncrasies and centralization, impeding implementation. This conclusion confirms part of H2A. Policy design for digital governance across all sectors under study took place in a top-down model with high concentration of powers. Although this approach was typical of the country's problematic governance culture of the past, the inclusion and successful coordination of solely expert designated instruments allowed comprehensive digital policy programs to emerge for the first time. At the same time, effectively and consistently communicating the technical demands of the new paradigm and its underlying aims to the country's public administration and citizens largely remained an afterthought. Absorbed by the policymaking patterns in place, the central government struggled to understand and address essential governance features that would allow the ambitious new model to smoothly go through implementation. Ultimately, radical policy entrepreneurship for digital governance may emerge in any setting; but change is likely to be contained during the early stages of implementation as prevailing policymaking processes recycle systemic pathogenies.

Fifth, the favouring of short-term institutional change, imposed by emergency conditions, will likely contain the magnitude of change and prevent a true digital governance transformation if institutional expansion is abandoned following the end of the pandemic. Confirming or rejecting hypothesis H2B demands a longer time frame. So far, the favouring of easily implementable policies and institutional layering has left fundamental issues of governance unaddressed across all sectors – e.g., coordination and jurisdictional coexistence between government departments or controlling the pharmaceutical budget. In education, this was the source of a divergent trajectory. Band-aid solutions by the Ministry isolated the sector from dedicated digitization instruments as far as entrepreneurship goes. However, in general, the conscious political rhetoric on “quick wins”, the declared 5-year digital governance transformation horizon and the incremental implementation which has taken place in practice hint at consistent political determination to see change through.



Right now, Greece's envisioned new governance paradigm speaks of a citizen-centric model of services provision, facilitated by state-built digital infrastructure and aiming at process simplification, meritocracy, efficiency and public-private partnerships. Strong policy entrepreneurship by specialized instruments in the Ministry of Digital Governance, paired with political determination and the facilitating of the Covid-19 crisis as a window of opportunity produced impressive policymaking activity towards a digital governance transformation. However, the pervasiveness of the established governance culture among policymakers, the state mechanism and the public have generated impediments both during design and implementation. As vividly described by an interviewee "Greece's digital governance model is currently a jump-started Lamborghini". Policymaking remains highly centralized, digital illiteracy persists, and feedback and guidance remain underdeveloped. Conditions of crisis proved instrumental in watering down much of the resistance and enhancing the value acceptability of a digital governance paradigm (Figure 1). The mechanisms identified are likely to emerge also under normalcy, albeit slower. Future research in digital governance should try and replicate the findings, especially in countries with similar institutional settings, as the causes of digital governance transformation can yield invaluable insights for the governance paradigms of the near future

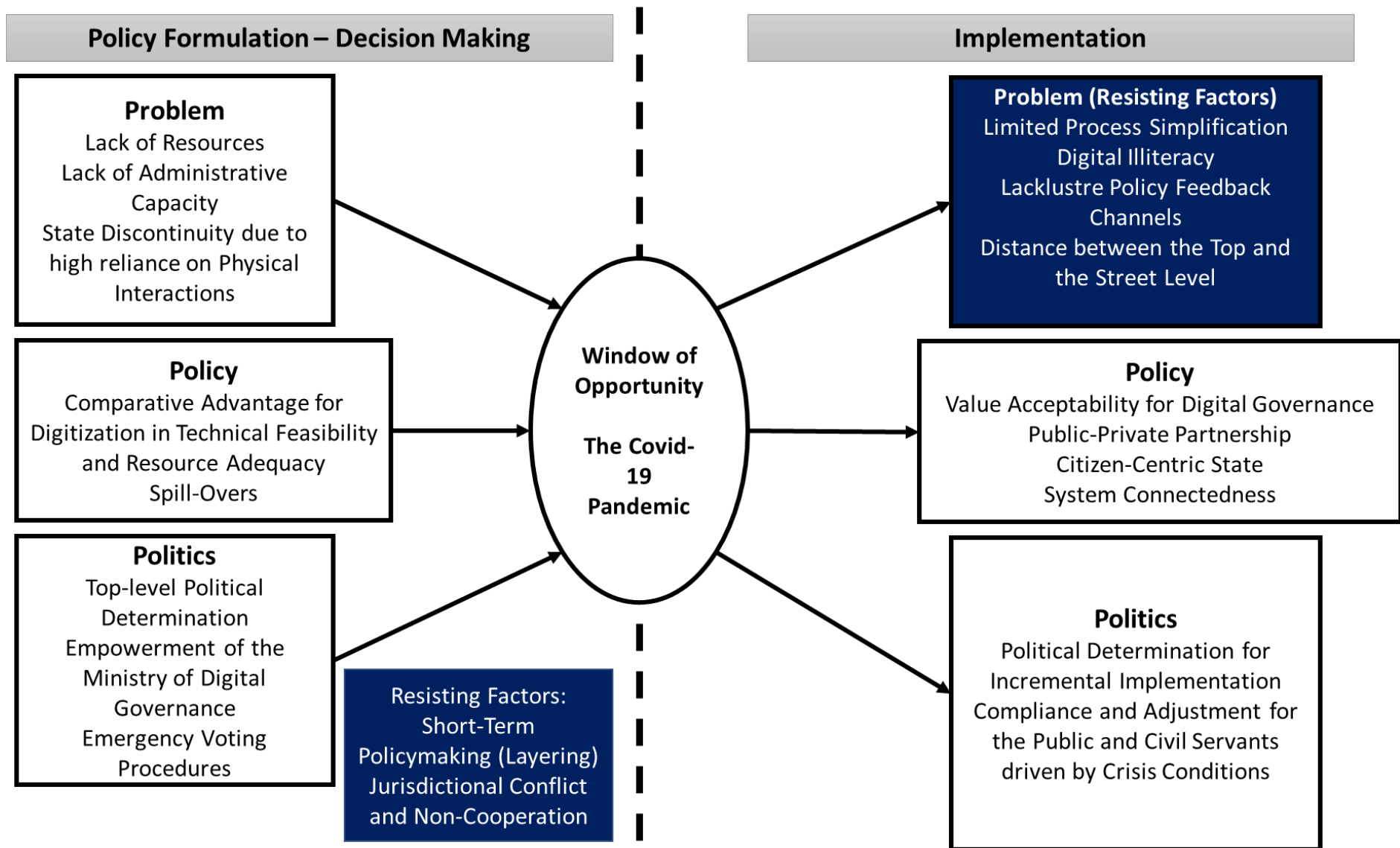


Figure 1: Digital Governance Transformation in Greece during the Covid-19 Pandemic.

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Ministerial Decision 119847/2021. Operation of Higher Educational Institutions (AEI) and Measures for the Prevention of Covid-19 Spreading for the 2021-2022 Academic Year. *FEK 4406/B/24-9-2021*.

Ministerial Decision 66436/2021. Emergency Measures for the Protection of Public Health from the Threat of the Further Spread of Covid-19. *FEK 4919/B/24-10-2021*.

Ministerial Decision 5703/2021. Extension in the Usage of Digital Debit Card as provisioned in Article 34 of Law 4816/2021. *FEK 5839 B/15-12-2021*.

## 10. Interviews

Interviews were conducted between May 2020 and March 2022. Interviewees were given the option of anonymity and the liberty to choose their desired in-text description. They are listed below with a more detailed presentation of their occupation and experience.	
<b>Name</b>	<b>Occupation</b>
Kyriakos Mitsotakis	Prime Minister of Greece, 2019-today
Kyriakos Pierrakakis	Minister of Digital Governance, 2019-today
Vassilis Kontozamanis	Senior Health Advisor to the Prime Minister, 2021-today, Deputy Minister of Health, 2019-2021
Diomidis Spinellis	Professor of Software Engineering, Athens University of Economics and Business, General Secretary for ICT Systems, Ministry of the Economy, 2009-2011
John Yfantopoulos	Professor of Health Economics and Social Policy, National and Kapodistrian University of Athens, President of the National Council of Public Health 2014-2016
Anonymous	Senior Government Official (2019-today), Coordinating Responsibilities
Anonymous	Member of the National Vaccination Committee, Health Policy Expert, former advisor to the Ministry of Health
Anonymous	Primary and Community Care Expert, three decades of experience in administrative and managerial roles at the central, regional, and local level
Anonymous	Ministry of Health Staffer, Pricing Systems Expert
Anonymous	Senior Official at EOPPY, Greece's Unified Single Healthcare Payer
Anonymous	Health Economics Expert, former advisor to the Ministry of Health
Anonymous	Senior Greek Bank Executive, former policy advisor to the Ministry of the Economy, over three decades of experience
Anonymous	Commercial Bank Manager, over two decades of experience
Anonymous	Business Owner in Hospitality, Board member of the Attica Association of Restaurant and Relative Businesses Owners
Anonymous	Accounting Practice Manager, Attica Region, over three decades of experience

Anonymous	High School Teacher, Representative of Attica Schoolteachers' Association, over two decades of experience
Anonymous	University Professor, long experience in advocacy for educational reforms
Anonymous	Veteran Civil Servant, over three decades of experience at both the central and regional level, expertise in administrative process simplification, services networks, and coordination
Anonymous	Regional Government Staffer, expertise in street-level services provision, over two decades of experience
Anonymous	Local Government Civil Servant, expertise in Municipal coordination and environmental policy, over a decade of experience
Anonymous	Administrative Services Manager, expertise in accounting, over two decades of experience