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Overcoming Turbulence: A Theoretical Analysis of Adaptive Governance as a Viable Organizational Paradigm

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Abstract:

Adaptive Governance (AG) can be seen as a public administration paradigm designed to navigate complex, turbulent, and uncertain environments. Traditional governance models, rooted in Weberian bureaucratic power and hierarchy or New Public Management (NPM) rooted in the rule of efficiency, are increasingly ill-equipped to manage the "problem of rhythm" (Janssen & van der Voort, 2016)—the mismatch between the slow pace of bureaucracy and the rapid, unpredictable nature of contemporary societal challenges. Adaptive Governance is more suited to dealing with these challenges by prioritizing learning, flexibility, experimentation, and decentralized feedback loops (Janssen & van der Voort, 2016). The central theoretical contribution of AG is its resolution of the "stability versus adaptability" paradox through the concept of ambidexterity: the capacity of a public organization to simultaneously "explore" new solutions and "exploit" stable, efficient processes (Janssen & van der Voort, 2016). By analyzing the existing literature, we connect AG to same family concepts like Collaborative Governance (CG) and Co-creation. We further offer a series of general examples of contemporary challenges which can be successfully managed through AG. We finally propose (based on the literature) a general set of strengths and weakness of the paradigm that highlights better its novel nature and its "provisional" status in the governance paradigm reality.

Keywords: adaptive governance, collaborative governance, co-creation, co-design, turbulent governance, generative AI

JEL: H11, O35, O43, D02

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1. THE CONCEPT OF ADAPTIVE GOVERNANCE (AG): A RESPONSE TO COMPLEXITY AND TURBULENCE

In the current context of public administration, public sector organizations across the globe are operating against a backdrop characterized by an escalating degree of complexity, ambiguity, and, most critically, turbulence (Trondal et al., 2022). Turbulence refers to "situations where events and demands interact in a highly variable, inconsistent, unexpected, and/or unpredictable manner" (Trondal et al., 2022, p. 7). These non-linear and ambiguous events, from pandemics and climate shocks to rapid technological disruptions, create a fundamental "problem of rhythm" for traditional public administration (Janssen & van der Voort, 2016). This "problem of rhythm" refers to the misalignment between the slow pace of bureaucracy and the rapid, unpredictable nature of contemporary societal challenges. Traditional governance mechanisms—such as network governance, organizational strategy, and program budgeting—operate on slow, deliberate timescales of years or months. In contrast, operational needs and especially contemporary societal crises have

a high-speed dynamic and demand responses in weeks, days, or sometimes even hours (Janssen & van der Voort, 2016).

This mismatch renders legacy governance models ineffective. Both classical Bureaucracy (Weberian), with its rigid hierarchies, and New Public Management (NPM), with its focus on pre-defined efficiency metrics and contractual controls, were designed for stable, predictable environments (Janssen & van der Voort, 2016; Torfing, Sørensen, & Røiseland, 2019). When faced with dynamic, complex, and uncertain situations, these rigid, control-based models are too slow and inflexible to respond effectively (Janssen & van der Voort, 2016).

Adaptive Governance (AG) can be seen as response to the limitations of the aforementioned models, a paradigm designed specifically to navigate these complex, turbulent, and uncertain environments. Unlike the traditional models, Adaptive Governance is more suited to dealing with these challenges by prioritizing learning, flexibility, experimentation, and decentralized feedback loops. The central theoretical contribution of AG, which we shall explore in depth in the present paper, is its resolution of the "stability versus adaptability" paradox through the concept of *ambidexterity*: the capacity of a public organization to simultaneously "explore" new solutions and "exploit" stable, efficient processes (Janssen & van der Voort, 2016).

1.1. Increasing complexity

From an external perspective, turbulence may arise through geopolitical crises or environmental catastrophes, each of which can force policy recalibrations at a moment's notice. Internally, institutional fragmentation and diverging stakeholder interests can also disrupt governance processes, creating confusion over lines of authority and undermining cohesive policy implementation. This is particularly evident when decision-makers must navigate "uncertain problem definitions" that cut across multiple policy domains—such as climate adaptation measures that simultaneously involve environmental agencies, urban planners, and public health officials

"Turbulent governance" (Ansell, Sørensen, & Torfing, 2020/2021) has become increasingly relevant. Rather than operating within stable and predictable contexts, contemporary public administration frequently encounters sudden shocks and ongoing uncertainties. The COVID-19 pandemic, which demanded swift policy responses based on emerging epidemiological data, offers a stark illustration of how existing command-and-control models can falter under pressure (Ansell, Sørensen, & Torfing, 2020/2021). Similarly, dramatic economic recessions and intensifying climate-related disasters further highlight the vulnerabilities of traditional, hierarchical decision-making.

Turbulence is generated by factors specific to complex systems

1. **Rapid shifts in context:** Situations such as virus variants, sudden migration surges, abrupt economic shifts, or political crises put immense pressure on decision-makers. In these scenarios, the luxury of gradual planning is absent, and quick, swift reactions are needed. The unpredictability of these shifts challenges the very foundation of linear planning models, which assume that tomorrow will be roughly similar to today.
2. **Uncertain problem definitions:** Modern problems are complex and hard to delineate clearly. Issues like climate change, public health, or the future of education are intertwined with multiple other layers or sectors and are rarely confined to a single policy domain. This characteristic makes the standard bureaucratic approaches, which rely on clear compartmentalization and distinct jurisdictional boundaries, extremely slow and difficult to apply. When a problem cannot be clearly defined, it cannot be easily assigned to a specific department, leading to administrative paralysis or fragmented responses.
3. **Fragmented governance structures:** The modern state apparatus is highly fragmented, spreading authority across federal, regional, and local levels. Additionally, there are pressures to involve various stakeholders with diverse interests at different levels and stages of the process. This adds complexity to the process and increases the difficulty in ensuring

accountability for decision-making. The multiplicity of actors involved often leads to a diffusion of responsibility, making it challenging to achieve the swift consensus required for rapid action.

The limitations of traditional command-and-control frameworks become apparent. While hierarchical structures can sometimes ensure clarity in responsibility, they often lack the agility needed for real-time adjustments and cooperative solutions. Up to date governance models necessitate new institutional designs that prioritize flexibility, learning-by-doing, and sustained stakeholder engagement. Embracing more adaptive models allows public administrators to integrate diverse perspectives, recalibrate policies in line with evolving evidence, and maintain the public's trust—essential elements for effectively governing in a world marked by continuous and often unpredictable change.

2. ADAPTIVE GOVERNANCE: BETWEEN CONTINUOUS LEARNING AND CHANGE

Adaptive governance (AG) emerged as a theoretical and practical solution to this governance-environment mismatch. It is an approach designed to "enhance the capacity of an organization to deal with and adapt to changes, while protecting the same organization from becoming unstable" (Janssen & van der Voort, 2016, p. 1). It is particularly suited for managing problems that are complex, uncertain, and involve a multitude of actors with diverging interests (Janssen & van der Voort, 2016). Rather than relying on hierarchical protocols or narrowly defined performance metrics, adaptive governance highlights the need for flexibility, iterative learning, and collaboration (Ansell & Torfing, 2021). Governments are encouraged to continuously adjust their strategies based on real-time feedback, evolving data, and diverse stakeholder perspectives.

Adaptive governance represents a framework through which public institutions continuously recalibrate their strategies, procedures, and partnerships to remain aligned with shifting contexts.

It calls for a holistic rethinking of how agencies and institutions interact, share information, and revise their objectives as new data become available. It recognizes that effective policymaking in uncertain or unstable environments demands more than incremental policy amendments.

This approach often involves pilot projects, policy experiments, novel participative approaches that offer opportunities to test emergent or innovative solutions on a limited scale, thereby minimizing potential risks.

The insights gleaned from these small-scale efforts can then inform broader implementation strategies, allowing for continuous refinement of solutions (policy) as well as adjustments to the process itself.

The central philosophical shift of adaptive governance is the displacement of *control* as the primary goal and its replacement with *learning*. Where traditional bureaucracy seeks to eliminate uncertainty and NPM seeks to manage it through contracts, AG "takes learning as the core value" (Gunderson & Holling, 2002, as cited in Janssen & van der Voort, 2016, p. 3). This approach acknowledges the "inability to predefine and control all possible factors that come in" and, "provides more leniency towards improvements and adaptations as a result of inevitable surprise" (Janssen & van der Voort, 2016, p. 3).

This model is essential for addressing "wicked problems"—a class of social problems, such as climate change, poverty, or global pandemics, that are ill-defined, constantly changing, and lack clear solutions (Rittel & Webber, 1973, as cited in Voets et al., 2021; Termeer & Dewulf, 2019). "Wicked" problems are notorious for defying straightforward or single-agency solutions; they involve incomplete knowledge, evolve rapidly over time, and often generate intense debate over fundamental values and objectives (Ansell & Torfing, 2021). Public administration efforts to address them must be equally adaptive, emphasizing iterative decision-making, collaborative learning, and a willingness to revise strategies as new information emerges.

2.1. Core principles of adaptive governance

Adaptive governance operates through a set of core principles and strategies that institutionalize flexibility and learning (adapted Janssen & van der Voort, 2016; Ansell & Torfing, 2021):

1. **Decentralization:** AG is animated by the idea that "**decentralized organizations can tackle problems in a more effective manner than top-down organizations**" (Brunner & Lynch, 2010, as cited in Janssen & van der Voort, 2016, p. 3). This involves decentralized decision-making power and, crucially, the "use of tacit decentralized knowledge" (Janssen & van der Voort, 2016, p. 3).
2. **Short feedback loops:** AG relies on rapid **feedback loops and capability utilization**. Rather than waiting for annual reviews, AG strategies involve "utilizing internal and external capabilities" to "spot changes early and take appropriate actions in a timely manner" (Janssen & van der Voort, 2016, p. 1, 3). This creates a bottom-up flow of information that informs higher-level decisions, keeping the organization tethered to real-world, real-time data (Janssen & van der Voort, 2016).
3. **Flexibility:** A defining characteristic of adaptive governance is the willingness to modify policies in response to emerging evidence, unforeseen events, or changing political and economic conditions. This flexibility may manifest through the **careful design of pilot programs, the establishment of multi-stakeholder task forces, or the revision of regulatory frameworks**. For instance, local governments might experiment with participatory budgeting in a few neighborhoods before extending the model citywide. By doing so, they can assess the method's feasibility and effectiveness, thus facilitating the incremental and data-driven expansion of successful initiatives.
4. **Learning and experimentation:** Integral to adaptive governance is **the recognition that errors, partial failures, and unexpected outcomes are not mere setbacks, but rather valuable learning opportunities**. Government agencies adopting this perspective actively seek feedback loops—such as public consultations, post-implementation reviews, and iterative stakeholder engagements—to gather information on both the strengths and weaknesses of existing policies. Over time, these systematic evaluations contribute to institutional resilience by enabling administrations to refine strategies, redeploy resources more effectively, and maintain public trust even amidst challenges. AG embraces **experimentation**, as traditional public governance methods with high aversion to risk are ill-suited for the "need for trial and error strategies" (Janssen & van der Voort, 2016, p. 1) while AG employs "adaptive planning, flexible response to change through incremental development, and early delivery of working solutions, based on short feedback loops" (Sutherland et al., 2011, as cited in Janssen & van der Voort, 2016, p. 2). These pilots and experiments are the primary mechanisms for learning.
5. **Collaboration through Co-Creation:** AG transcends traditional governmental boundaries by **engaging with actors beyond the public sector**. This includes civil society organizations, think tanks, academic institutions, private enterprises, and local communities, all of whom may possess distinct insights and capabilities relevant to policymaking. Such collaborative relationships can foster creativity in problem-solving, as diverse groups bring complementary areas of expertise and perspectives.

The adoption of these principles creates the central paradox of adaptive governance. The public sector has a foundational, non-negotiable duty to ensure stability, accountability, and the "fair treatment of constituents" (Janssen & van der Voort, 2016, p. 3). However, the very strategies that define AG—decentralization, flexibility, and experimentation—can "challenge stability and

accountability" and "result in instability" (Janssen & van der Voort, 2016, p. 1, 3). There is an inherent "tension between the ability to react quickly, ensuring stability and the making of sound, transparent and accountable decisions" (Janssen & van der Voort, 2016, p. 2). The solution to this dilemma according to some authors (Janssen & van der Voort, 2016) is *ambidexterity*.

An *ambidextrous organization* is one with the "ability... to pursue two contradictory activities at the same time" by performing a "balancing act" and consciously separating its "operational" functions from its "innovative" or "problem solving" functions (Galbraith, 2004, as cited in Janssen & van der Voort, 2016, p. 3): (1) **exploitation (the operational core)** - this structure focuses on "controls and deadlines," "efficiency," and "effectiveness." It is the stable, hierarchical core that ensures accountability and reliable service delivery and (2) **exploration (the innovation core)** - this structure focuses on "freedom," "creativity" and "differentiation" in order to generate solutions – this structure is the adaptive, experimental, decentralized arm that engages in learning and trial-and-error. Adaptive governance, therefore involves a sophisticated, *ambidextrous design* that allows the public sector to *both* run its day-to-day operations reliably while generating solutions to disruptive changes. This requires "knowledge about which parts of an organization can or need to change and which parts should remain stable for a longer time" (Janssen & van der Voort, 2016, p. 3). By creating this dual capacity, the organization avoids both the "competency trap" (being so stable it becomes obsolete) and the "failure trap" (being so experimental it fails to function) (March, 2003; O'Reilly & Tushman, 2008, as cited in Janssen & van der Voort, 2016, p. 4).

3. LITERATURE REVIEW: MAPPING THE GOVERNANCE LANDSCAPE

Adaptive governance does not exist in a theoretical vacuum. It is part of a broader "New Public Governance" movement (Osborne, 2006, as cited in Voets et al., 2021) and is often associated with two other prominent concepts: *collaborative governance* and *co-creation*. While strongly interconnected (and interdependent) there are differences between these terms which are important for theoretical clarity:

- **Adaptive Governance (AG) and Collaborative Governance (CG)**

In the *Handbook on Theories of Governance* (Ansell & Torfing, 2016), both "adaptive governance" and "collaborative governance" (CG) are listed as distinct "forms of governance" (Voets et al., 2021). Collaborative governance (CG) is defined as "a mode of policy and service delivery that shifts away from government- or market-centric settings to a setting in which public, private nonprofit, and private business actors are jointly involved in and accountable for policymaking and service delivery" (Voets et al., 2021, p. 1). Like AG, CG also emerged as a response to "wicked problems" (Rittel & Webber, 1973, as cited in Voets et al., 2021, p. 3). However, its primary focus is on the *process* of managing multi-actor relationships. It is a "higher-order form of network governance" (Voets et al., 2021, p. 4) that emphasizes "joint decision-making, implementation, and shared accountability" (Voets et al., 2021, p. 3) through formal, "consensus-oriented, and deliberative" processes (Ansell & Gash, 2008, as cited in Voets et al., 2021, p. 5). While complementary, AG and CG solve "different" problems.

Collaborative Governance addresses political and social fragmentation; its central challenge is managing "semi-autonomous actors with different interests and resources" (Voets et al., 2021, p. 1). The goal is to build consensus, establish legitimacy, and pool resources to create public value. Adaptive Governance addresses knowledge-related and environmental uncertainty; its central challenge is managing complexity and turbulence in the problem environment itself (Trondal et al., 2022). The goal is to facilitate learning and flexibility to adapt to changing conditions.

We could imagine situations in which a system can function without the other. For example, a highly collaborative network of stakeholders (high CG) could be rigid, bound by its own consensus, and unable to adapt to new data (low AG). Conversely, a single, hierarchical agency (low CG) could be highly adaptive, using internal learning loops and experiments to alter its own processes (high AG). For today's wicked problems, which are typically both politically fragmented *and* epistemically uncertain, the most robust approaches involve merging the two, as seen in "collaborative adaptive network governance" frameworks.

- **Adaptive Governance (AG) and the Co-Creation Paradigm (CC)**

Co-creation is an even broader concept, often presented as a new, overarching *strategy* or *paradigm* for the public sector (Ansell & Torfing, 2021; Torfing et al., 2019). It aims to fundamentally transform the public sector from a "legal authority" (Weberian) or "service provider" (NPM) into an "arena for co-creation" (Torfing et al., 2019, p. 5). Co-creation is a process wherein public officials, private sector actors, and civil society members jointly deliberate and design policy solutions, by facilitating knowledge exchange, resource pooling, and inclusive dialogue, ensuring that policy initiatives are both resilient in the face of uncertainty and responsive to the diverse realities of an ever-evolving society (Ansell & Torfing, 2021). It is a "systematic involvement of relevant individuals, communities, and organizations in value co-creation," which includes "co-identifying common problems or needs... co-developing solutions and potentially co-governing their implementation" (Ansell & Torfing, 2021, as cited in Nordberg & Aflaki, 2024, p. 2). It is distinct from CG in its explicit emphasis on *creative elements* and *innovation* rather than just consensus-based decision-making (Ansell & Torfing, 2021, as cited in Nordberg & Aflaki, 2024). The goal of co-creation is to "spur public innovation" and "build ownership for bold solutions" by mobilizing societal resources (Ansell & Torfing, 2021, p. 1).

Adaptive governance emphasizes learning, flexibility, and openness to new ideas, co-creation provides the concrete forums—such as workshops, online platforms, and design labs—through which diverse actors can meet, deliberate, and co-produce policy solutions. If co-creation is the transformative strategy, adaptive governance is the necessary operational process to manage it.

The primary barriers to co-creation are not legal or financial, but cultural and institutional; resistance is "more 'in the heads' of municipal managers and politicians and engrained in administrative traditions" (Nordberg & Aflaki, 2024, p. 1). These traditions are built on the risk-averse, control-oriented logics of bureaucracy and NPM (Torfing et al., 2019).

A rigid, hierarchical system cannot manage the dynamic, bottom-up, and unpredictable process of co-creation; it would stifle the very innovation it seeks to foster (Torfing et al., 2016, as cited in Nordberg & Aflaki, 2024). Therefore, to be successful, co-creation *requires* an adaptive governance framework. The public sector must be able to *learn* from its citizen-partners, be *flexible* in its procedures, and *experiment* with the novel solutions that are co-developed. This connection is seen in practice, where "robust governance strategies" (an adaptive concept) were essential for managing "co-creation" processes during the turbulence of the COVID-19 pandemic.

Table1. Comparative analysis of governance paradigms

Feature	Classical Bureaucracy (Weber)	New Public Management (NPM)	Collaborative Governance (CG)	Adaptive Governance (AG)	Co-Creation (NPG)
Core Goal/Value	Legal Authority,	Efficiency, Economy, Performance	Consensus, Public Value, Legitimacy	Learning, Flexibility, Resilience	Innovation, Public Value, Empowerment

	Stability, Control				
Problem Context	Tame / Complicated	Complicated / Market-Failure	Wicked (Political Fragmentation)	Wicked (Epistemic Uncertainty)	Wicked (Societal Challenges)
Key Actors	Public Experts, Administrators	Public Managers, Private Contractors	Public Agencies, Non-State Stakeholders	Public Organization, System Experts	Public/Private/ Civil Society Actors, Citizens
Citizen Role	Subject / Client	Customer (with "Exit" option)	Partner / Stakeholder	Sensor / Data Source	Co-Designer / Co-Producer
Primary Mechanism	Hierarchy, Rules, Procedures	Market, Contracts, Performance Metrics	Deliberation, Network Management, Consensus	Feedback Loops, Experimentati on, Learning	Joint Action, Platforms, Innovation
Source(s)	(Janssen & van der Voort, 2016; Torfing et al., 2019)	(Janssen & van der Voort, 2016; Torfing et al., 2019)	(Voets et al., 2021)	(Janssen & van der Voort, 2016; Trondal et al., 2022)	(Ansell & Torfing, 2021; Torfing et al., 2019)

Source: Generated using Gemini 3 PRO (AI) using original articles cited as sources

4. THE CHALLENGE OF EFFECTIVENESS: DIFFERENT ASSUMPTIONS MEAN DIFFERENT DEFINITION OF SUCCESS

A particularly difficult conceptual challenge is *evaluating the effectiveness of the model*. The "wicked problems" that AG addresses create an "evaluation paradox" (Termeer & Dewulf, 2019). Traditional "linear-rational evaluation methods" (Termeer & Dewulf, 2019, p. 5) usually focus on output and at best outcome but are based on classical linear causation model – this would be unsuited for AG as basically compares outputs and outcomes to "previously set promises, targets or budgets" (Termeer & Dewulf, 2019, p. 3). However, in an uncertain, complex environment, this is impossible, as the nature of the problem makes it impossible to accurately establish what success looks like, thus making it hard to have objective reference points to which to compare results. Using traditional linear evaluation models can lead to dysfunctional responses: either "paralysis" (the problem is too big to even start) or "overestimation" (the belief that the wicked problem can be "solved" with a simple final target) (Termeer & Dewulf, 2019, p. 3).

The "Small Wins Framework" (Weick, 1984, as cited in Termeer & Dewulf, 2019) is an evaluation strategy built for Adaptive Governance which redefines success by focusing on "concrete, completed, implemented outcomes of moderate importance" (Termeer & Dewulf, 2019, p. 4). This framework shifts the object of evaluation from "achieving a fixed goal" to "making progress and learning." Evaluating an experimental, adaptive process against a static, pre-defined outcome is a category error; it would punish the very "failures" from which AG is designed to learn.

The Small Wins framework mirrors the AG process. It consists of three steps (Termeer & Dewulf, 2019, p. 1):

1. **Identifying and valuing small wins:** Recognizing and legitimizing intermediate outcomes, such as "joint fact-finding" (Ansell & Gash, 2007, as cited in Termeer & Dewulf, 2019) or the establishment of a new partnership. One risk is that small wins may go unrecognized, as evaluators tend to observe only the processes and results, what they had thought would happen given the formal plans and activities (Weick, 2000). Therefore, the first step is to identify and value these emerging small steps. Real world examples include the first administrator of the U.S. Environmental Protection Agency in the early 1970s, who on his first day in office started five lawsuits against major American cities that did not comply with obscure 80-year-old water pollution legislation (Weick, 1984), organizing a breakfast for homeless people (Plowman et al., 2007), activists who forced pharmaceutical companies to disseminate drug treatments against HIV (Jason, 2012), the development of joint language in a roundtable on waste management (Turcotte & Pasquero, 2001), joint fact-finding (Ansell & Gash, 2007) or food on the table for farmers who participated in South African water management fora (Warner, 2006).
2. **Analyzing if "propelling mechanisms" are activated:** Assessing whether the small win is leading to larger change by activating mechanisms like "energizing" stakeholders, facilitating "learning by doing," or creating a "logic of attraction" for new resources (Termeer & Dewulf, 2019, p. 12). These mechanisms contribute to the dispersion and accumulation of small wins. The robustness mechanism means that, when small wins become numerous, they may be more likely to result in sustained change or desired path dependencies (Levin et al., 2012 as cited in Termeer & Dewulf, 2019, p. 12).
3. **Organizing that results feed back into the policy process:** Ensuring that the learning from the small win is captured and used to "activate new small wins" (Termeer & Dewulf, 2019). This means both creating awareness about the importance of small wins and propelling mechanisms and encouraging actors involved to seriously reflect on how they have achieved accumulating small wins and how they can use these insights to overcome barriers to initiating or upscaling (Baez & Abolafia, 2002; Termeer, Dewulf, & Biesbroek, 2017). Feed backs are targeted to all phases of the policy process including agenda setting, policy design, implementation or developing an evaluation framework (Termeer & Dewulf, 2019).

This approach (Small Wins) operationalizes the core AG principles of experimentation (the small win), monitoring (identifying the win and its propelling mechanisms), and adaptation (feeding the learning back into the system) into a working evaluation framework.

5. ADAPTIVE GOVERNANCE IN PRACTICE: APPLICATION IN CONTEMPORARY CONTEXTS

Adaptive Governance is not merely a theoretical construct; it is an applied strategy for managing the most turbulent and complex public challenges. Its utility is most evident in policy areas where uncertainty, complexity, and rapid change are the norm:

- **Ecological resilience and climate change**

Adaptive governance originated in the study of social-ecological systems (Dryzek, 1987; Folke et al., 2005, as cited in Janssen & van der Voort, 2016, p. 3). Its application to climate change adaptation, a quintessential wicked problem, is therefore a natural fit. An example is the rise of "locally-led climate adaptation" projects (Tye & Suarez, 2021). These projects are a direct rejection of traditional, top-down environmental management, which "rarely match[es] the relevant scale of ecological complexity". These locally-led initiatives demonstrate the core principles of adaptive governance in action (Tye & Suarez, 2021): (1) **decentralized decision-making** - local actors and communities have decision-making power in planning, implementing, and monitoring and evaluation; (2) **flexibility** - they are supported by "flexible funding" mechanisms that are not earmarked for specific activities, allowing resources to follow the problem as it evolves ; (3) **iterative learning** - they are built on

adaptive management approaches that feature iterative learning from the local to the national level and vice versa.

- **Public health crisis: the COVID-19 Pandemic**

The COVID-19 pandemic served as an acute, global "societal rupture" (Trondal et al., 2022) that "exposed major structural deficiencies in global health governance". It provided a real-world, high-stakes test of the adaptive capacity of governance systems.

Several authors (Ashtana et al., 2024; Janssen & van der Voort, 2020) analyzing governance metrics and pandemic outcomes found that countries with high "governance performance" had more positive outcomes, measured in earlier public health interventions, lower mortality, and broader vaccine coverage. The *capacity* of the governance system to learn, decide, and implement policy effectively and quickly (e.g., faster school closures) was a reliable predictor of long term positive outcomes.

The pandemic also highlighted the link between turbulence and collaboration. The crisis "tested public governance systems at all levels" and forced "institutional integration and cooperation between government and non-governmental actors for co-creating public value" (Scognamiglio et al., 2022). This provides practical evidence of the necessary linkage between a turbulent event (the pandemic), the collaborative response (co-creation), and the robust governance strategies (AG) needed to manage it (Scognamiglio et al., 2022).

- **Exponential technological change: governing (with) artificial intelligence**

Rapid technological change, particularly in Generative AI models like ChatGPT and Gemini, presents a "pacing problem" for governance. The "rapid speed of development" in AI means that traditional legislative processes, which can take years, produce laws that are "outdated or irrelevant within months" (Reuel & Undheim, 2024). The EU AI Act, which took three years to pass, is cited as an emergent case study of this mismatch (Reuel & Undheim, 2024).

Adaptive governance is proposed as a viable solution, requiring a system where governance can "co-evolve" with the technology (Reuel & Undheim, 2024). This involves a multi-stakeholder framework where government, industry, academia, and civil society engage in continuous *monitoring* of AI developments, *anticipating* future challenges through strategic foresight, and *challenging* the system to spur continuous improvement (Reuel & Undheim, 2024). What is interesting is the combination (and convergence) of the specifics of the AG process with the capabilities of AI.

This is operationalized as a proposal for *AI-enabled adaptive governance frameworks* (Acosta & Hughes, 2024). In such a model, AI is used to *enable* the adaptive process itself. The framework allows government to (1) **monitor the process through the** use of AI which can literally "continuously monitor implementation and suggest corrections when metrics get off track", (2) learn throughout the process by using the capacities of AI to "synthesize" vast amounts of data and public feedback from "participatory governance platform[s]" and finally (3) feed-back the results of the analysis to **adapt and use AI to** "recommend tailored changes to policies to improve their outcomes and success."

This creates a flexible, iterative feedback loop that "augments rather than replaces human judgment" and keeps "policymakers and the public in charge of final policy decisions" (Acosta & Hughes, 2024) but also harnesses the capabilities of AI.

6. DISCUSSION: STRENGTHS AND WEAKNESSES OF THE ADAPTIVE GOVERNANCE MODEL

The theoretical and practical applications of adaptive governance reveal a paradigm defined by a central tension - the strengths lie in its ability to manage the stability-versus-change paradox, but its weaknesses are rooted in the very flexibility that defines it.

We summarized the main (theoretical) strong/weak points as they emerge from the literature:

Table 2. Strengths and Weakness of AG paradigm

Strengths	Weaknesses
<p>Primary strength: unique capacity to manage complex situations with high level of uncertainty – wicked problems</p>	<p>Primary weakness: success is fragile, sometimes temporary and hard to define/ generalize (no universals) making it difficult to institutionalize.</p>
<p>Managing paradox: AG's most significant contribution is the "balancing act" it enables through "ambidextrous strategies" (Janssen & van der Voort, 2016, p. 1). It provides a theoretical and practical blueprint for creating "dual structures" (Duncan, 1976, as cited in Janssen & van der Voort, 2016) which allows public organizations to <i>exploit</i> existing services with efficiency, control, and accountability, while simultaneously <i>exploring</i> new solutions with freedom, creativity, and experimentation (Galbraith, 2004, as cited in Janssen & van der Voort, 2016, p. 3). <i>Ambidexterity offers the possibility of maintaining core government functions while adapting and generating solutions to new threats.</i></p> <p>Cultivating Resilience: In turbulent times, the ultimate goal of governance is <i>resilience</i> (Trondal et al., 2022). AG is an active mechanism for building this. It establishes the "processes and mechanisms that foster adaptability" (Trondal et al., 2022, p. 3) by "enhancing adaptive capacity to deal with disturbances" (Folke et al., 2005, as cited in Janssen & van der Voort, 2016, p. 3). This allows public organizations to absorb, respond to, and recover from external shocks while "retaining their function and identity" (Trondal et al., 2022, p. 4) – this is basically instilling resilience in the system itself.</p> <p>Facilitating innovation and collaboration: AG provides the necessary "flexible tools for (design-based) interventions" (Trondal et al., 2022, p. 4) that collaborative governance and co-creation require. These "networked platforms" (Trondal et al., 2022, p. 3) and "arenas" (Ansell & Torfing, 2021) create "new forms of governing that are both more responsive and inclusive" (Trondal et al., 2022, p. 5), allowing for the pooling of knowledge, joint strategizing, and policy innovation.</p>	<p>Institutionalization Paradox: The very flexibility that makes AG effective is also its greatest liability. Institutionalization, the process of creating deep, structural, and enduring change—requires "the development of more or less regular and fixed patterns" and the "fixation and formalization of rules" (Zijderveld, 2000, as cited in Eshuis & Gerrits, 2019, p. 3-4). This process of <i>solidifying</i> rules is in direct conflict with the <i>flexibility</i> core of AG (Eshuis & Gerrits, 2019, p. 2). Adaptive governance struggles to become a permanent system because its <i>process</i> resists formalization while public institutions have trouble in adopting a way of work based on "continuously evolving processes and solutions". This is demonstrated best in practice - an in-depth case study of "slow urbanism" (a form of AG in urban regeneration) found that as soon as the external driver—an economic crisis—eased, the organization "returned to a more traditional way of steering, as dominated by the rule of law, formal procedures, hierarchy, and top-down control" (Eshuis & Gerrits, 2019, p. 14). The adaptive approach "failed to diffuse and endure" (Eshuis & Gerrits, 2019, p. 1) as the incumbent, stable institutions re-asserted their dominance.</p> <p>Specific case usage: Often, AG is not allowed to become transformational. It is framed by the existing power hierarchy as a temporary <i>exception</i> - a "pilot" or "special area for experimentation" (Eshuis & Gerrits, 2019, p. 11). This framing strategically contains the adaptive approach, allowing the bureaucracy to benefit from its experimentation without letting it challenge the core "arena rules" of the governance system.</p> <p>Cultural Resistance: The deepest barrier is cultural. The success of co-creation and adaptive models is hindered by resistance "in the heads" of municipal managers and politicians and engrained in administrative traditions" (Nordberg & Aflaki, 2024, p. 1). The established bureaucratic culture, which values predictability, risk-aversion, and control, is fundamentally opposed to the adaptive culture, which values learning, risk-tolerance, and "leniency towards improvements" (Janssen & van der Voort, 2016, p. 3; Nordberg & Aflaki, 2024).</p>

Source: Authors, 2025

7. CONCLUSIONS

Adaptive Governance is an essential and powerful governance paradigm for public organizations facing turbulence, complexity, and the need to innovate through co-creation. Its theoretical framework, centered on learning, flexibility, and its capacity of ambidexterity, provides a viable path for navigating a world of "wicked problems."

However, its practice remains fragile and scattered. One of its major limitations is the current perception that it is a one-off solution which makes it dependent on the very crisis that necessitates it. When turbulence subsides, the inertia of stable, hierarchical institutions tends to reclaim control, relegating adaptive approaches to temporary, contained experiments (Eshuis & Gerrits, 2019).

The ultimate challenge for public administration, therefore, is not to *choose* between stability and adaptability, but to master the "ambidextrous organization" (Janssen & van der Voort, 2016). This requires moving adaptive governance from a temporary *exception* to a permanent and *legitimate* part of the bureaucratic *rule*. Such a transformation depends less on new platforms or "innovation labs" and more on a profound cultural shift in public managers and a redefinition of public accountability—moving away from rigid, pre-defined targets and toward a more realistic model of defining and evaluating effectiveness by looking at progress, learning, and resilience (Termeer & Dewulf, 2019).

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