

DIGITAL LEADERSHIP AND PUBLIC-SECTOR PERFORMANCE: STRATEGIC AGILITY AND BUREAUCRATIC RIGIDITY IN EMERGING- ECONOMY ORGANISATIONS

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DOI: <https://doi.org/10.5281/zenodo.22654049>

Keywords

digital leadership; strategic agility;
public-sector performance;
bureaucratic rigidity; digital
transformation; dynamic
capabilities

Article History

Received: 07 January 2025

Accepted: 17 March 2025

Published: 31 March 2025

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Abstract

Most public organisations acquire digital services, data platforms, automation technology, and integrated systems to achieve integration. Nonetheless, simply having such technologies in place does not guarantee improved performance or added value. In this literature review, digital leadership is defined as an organisational capability that transforms different technical resources into strategic agility and value creation within the public sector organisation. At the same time, bureaucratic rigidity is viewed as a boundary condition that, despite its potential to stifle innovation, helps maintain organisational legitimacy and standardisation. By applying insights from the dynamic capabilities perspective and the literature on digital government and strategic agility, this paper contrasts the processes of digitisation with those of digital transformation. Three main digital leadership activities are identified as strategic sense-making, cross-boundary mobilisation, and responsible resource reconfiguration. Strategic agility is measured by strategic sensitivity, unified leadership, and resource fluidity. Five propositions relate digital leadership to service quality, process efficiency, employee adaptability, innovation capability, and citizen responsiveness. Four external conditions, including administrative regulations, bureaucratic hierarchy, political support, and institutional capacity, affect the above relationships, leading to differential results among organisations. The paper opposes technological determinism and the belief in inherent limitations of bureaucracy for development. A model of governance that supports adaptive digital leadership within a solid normative structure is proposed. A multi-level research design can be used to test this theoretical framework empirically. Bureaucratic rigidity should be conceptualised as a multidimensional phenomenon with different functions.

1. INTRODUCTION

However, governments face several tasks at once: increasing the speed of service delivery, increasing the transparency of government activities, protecting public funds, developing evidence-based policies, and coping with the increasing

complexity of social problems. The digital technology is seen as the tool to cope with the above-mentioned needs: starting from portals for the delivery of services and mobile apps, ending up with cloud infrastructure, digital identity,

artificial intelligence, and data systems, all these tools are supposed to make administration cheaper and provide access to the public services (Khattak et al., 2017; Abbas et al., 2022). Nonetheless, most governmental organisations have digitised old processes but have left the structures of decision-making, resourcing, and departmental divisions intact (Abbass et al., 2018; Alnoor et al., 2023).

Mergel et al. (2019) describe digital transformation in the public sector as a set of transformations that require a total change in the service model, organisational processes, internal structure, and organisational culture. This definition distinguishes digital transformation from two other kinds of superficial transformations: one is digitisation, which consists of the process of transformation of analogue information presented in the form of papers into digital form, and the second is digitalisation, which consists of the use of technologies to make slight changes and optimisation of current processes (Khattak et al., 2017; Bushra et al., 2022). The definition is quite useful because it shows that achieving significant progress requires not only the implementation of the new technologies. It means that although the online form can replace paper applications, the data will not be interoperable across departments because the approval process is siloed and employees do not have the authority to change the processes; hence, the bottlenecks and delays will persist. Therefore, leadership becomes an essential component of the successful transformation (Khattak et al., 2018; Iqbal et al., 2025ab). It does not mean that high-level officials should learn to write code and become technologically competent; it means that leaders should enable them to understand what technologies are capable of doing, to match technological opportunities with the mission of the organisation, to involve stakeholders from different sectors for cooperation, to manage the risks connected with the new technologies, and to lead the organisation through the process of learning. To ensure the transformation succeeds, the leaders set the necessary conditions, such as

task prioritisation, budgeting, cross-departmental collaboration, employee training, procurement, and the freedom to try and make mistakes. Moreover, leadership determines whether the technologies can be used to improve public accountability or to centralise without appropriate guarantees of transparency. The number of studies proves the correlation between digital leadership and important organisational outcomes such as flexibility, innovation, engagement, and performance.

Nevertheless, the existing literature does not provisionsistent results regarditthe ng the direct and moderating influences of these correlations (Mollah et al., 2024). Although these correlations have been noted, the main mechanisms by which leadership affects the performance of public organisations have not been studied sufficiently, especially from the perspective of the institutional context in which most public organisations operate. The simple model of direct effect considers leadership as the universal lever that automatically produces results (Khattak et al., 2019).

In contrast, this paper argues that a particular intermediate capability, strategic agility, mediates the link between digital leadership and organisational outcomes. To enable digital leadership to sustain performance gains, it must first help the organisation recognise external changes, build shared agreement among all stakeholders around new goals, and redirect internal resources to accommodate changing needs (Iqbal et al., 2020). Without these essential capabilities, digital strategies risk becoming mere performative window dressing or collections of disconnected, uncoordinated, siloed projects. Bureaucratic inertia over the long term fundamentally undermines this relationship. The rules, hierarchical structures, and standardised processes that characterise public bureaucracies restrict adaptive change. At the same time, they perform a vital protective role: safeguarding due process, ensuring equal treatment for all citizens, preserving institutional continuity, and maintaining public accountability. Public administration cannot simply adopt the loose,

unstructured agility approaches used by private-sector startups, because doing so would remove the foundational safeguards that legitimise government action. The most consequential policy and practical question, therefore, is not rigidity itself, but overly rigid, misaligned rigidity—rules that serve no meaningful public value; procedures that prevent necessary cross-departmental data sharing; and processes that delay the reallocation of resources toward high-priority needs or that punish responsible, well-intentioned trial and error. For this reason, this paper treats bureaucratic rigidity as a boundary condition that produces both protective and restrictive effects on digital transformation.

2. Methodology

This analysis centres on three core research questions. First, how does digital leadership build strategic agility within public organisations? Second, through what specific processes does this strategic agility influence organisational performance and the creation of public value? Third, under what conditions does bureaucratic rigidity become a constraint, or conversely, function as a normative force that advances public sector digital transformation? The analytical framework proposed in this paper can be directly applied to emerging economies, where digital infrastructure, administrative capacity, political support for transformation, and the extent of the digital divide vary dramatically across government agencies and levels of government.

To provide a solid foundation for our paper, an integrative review was conducted. This is a form of literature review that combines previous studies on digital transformation, e-government, strategic leadership, organisational agility, dynamic capabilities, and public sector innovation. Since this paper intends to inquire rather than validate a narrow hypothesis, this type of literature review is highly appropriate, as it will consolidate work that is theoretically and methodologically separated and analysed at various levels (Snyder, 2019; Torraco, 2005). The following keywords were used for literature

search in this paper: “digital leadership”, “digital government transformation”, “strategic agility”, “organisational agility”, “public-sector performance”, “bureaucratic rigidity”, “institutional barriers” and “public value”.

Peer-reviewed journal articles which provide a definition, theoretical framework, empirical results or systematic evidence on which the paper is built were chosen as the most relevant sources (Iqbal et al., 2024). Literature on dynamic capabilities and strategic agility was also chosen, as these theories explain the mechanisms linking the paper's key concepts. Research conducted in the public sector was prioritised to avoid generalising findings from the private sector, where they may not be applicable. In addition, the reviewed literature was categorised into five foundations derived from the model: leadership practices, agility dimensions, institutional context, performance outcomes, and level of analysis.

Based on the recommendations of Webster and Watson (2002), our review is organised by concept rather than chronology. The primary purpose of the analysis in this study is to build theory and provide testable propositions, rather than to provide an overview of all previous studies or to conduct a quantitative meta-analysis. The paper clearly indicates that the literature review does not aim to cover all available sources across all relevant field databases.

3. Theoretical Foundation

3.1 Dynamic capabilities in public organisations

Dynamic capabilities refer to an organisation's ability to proactively detect emerging opportunities and latent risks in its environment, seize opportunities, and reallocate its resources in response to new circumstances (Teece, 2007).

For private enterprises, operationalising these capabilities points toward creating a durable market lead, one that lets a business outperform competitors, gain more customers, and increase profitability. By contrast, in the public sector—government and other public bodies, the primary objective these capabilities must serve is fundamentally different. Rather than

strengthening a firm's commercial advantage, the focus is on generating public value: stronger public services, policy decisions that are legally sound and defensible, fair access for everyone to public resources, organisational resilience capable of absorbing risks during emergencies, and the efficient use of every cent and all resources held by public entities, with no waste of taxpayers' money.

The framework for describing the dynamics of a firm's capabilities is not ready to be imported into the public sector, as it needs to be tailored to the specific conditions of public organisations. First, public organisations have several constraints. The first constraint is that they must comply with the legal constraints of their authority and must not perform anything outside of these boundaries. The second constraint is that their activities are politically constrained and regulated from above. The third constraint is that the power of such organisations is delegated through a series of principals and, therefore, they have to report to both their leaders and their representatives. The fourth constraint is that they must report to the public and justify every expense. The above-mentioned constraints are why the success of resource reallocation in the public sector cannot be measured in the same way as in private firms, namely by performance and financial results. Private firms that miss the window of opportunity fail, while public organisations cannot afford to ignore regulations designed to speed up the process.

For any public institution to implement any resource adjustment, even a simple transfer of funding from one project to another, it must typically complete a full set of procedures first: conduct public consultations to gather community input; pass legal reviews to confirm no regulatory violations are committed; comply with procurement control requirements to prevent improper spending; and conduct equity assessments to confirm that the adjustment does not disadvantage any group or deny any population access to entitled services. Thus, dynamic capabilities in the public sector are, at their core, planned adjustments aimed at creating

public value within the legal scope of legitimate authority. They are not unconstrained, absolute freedom for institutional managers to alter operations at will.

Digital leadership, in turn, is the micro-foundation that enables public organisations to operationalise this set of dynamic capabilities—all capabilities are activated through leaders' specific actions. The top leader and core managers of an organisation must first understand what technological changes can deliver and what transformations they will bring, avoiding poorly planned projects launched without a clear grasp of the technology's utility; they must dare to approve small-scale trial and error, rather than blocking all new initiatives out of fear of problems; they must build cross-functional teams that bring together staff from IT, operations, legal, finance, and other departments to collaborate, rather than allowing siloed work; they must mediate inter-departmental conflicts, rather than allowing parochial interests to derail core priorities; and they must protect learning efforts during exploration, rather than shutting down entire projects after only one or two unsuccessful attempts. These leadership decisions directly determine whether all of the organisation's digital initiatives will remain isolated, small-scale IT projects such as merely moving paper forms online with no other changes or be scaled up to become core organisational transformations that fundamentally reshape how the entity delivers services and makes decisions.

3.2 Strategic agility

Doz and Kosonen (2010) decompose strategic agility into three interconnected dimensions: strategic sensitivity, leadership unity, and resource fluidity.

The first dimension, strategic sensitivity, is the ability to detect external changes in real time and interpret their meaning and impact on one's own organisation, rather than merely observing changes without understanding the underlying needs they signal. The second dimension, leadership unity, is the ability to enable all

decision-makers within the entity to reach a shared commitment to a common goal, be willing to set aside parochial departmental interests to advance the initiative collectively, and prevent siloed work or even mutual obstruction across departments. The third dimension, resource fluidity, refers to the ability to reallocate human capital, budgets, data, and core organisational focus at any time to newly emerging, high-priority needs requiring urgent resolution, rather than being trapped by pre-existing resource allocations that prevent adjustment.

These three dimensions are fully applicable to public-sector entities, such as governments, and can even be said to directly address the core needs of digital transformation in public organisations. To develop strategic sensitivity, an entity must integrate service data, public feedback, and on-the-ground experience from frontline staff to identify emerging public needs that are not yet widely recognised, rather than reacting only after problems have accumulated to the point of crisis. Leadership unity is indispensable because most digital public services cannot be delivered by a single department alone; for example, launching an online medical insurance reimbursement service requires coordination from the medical insurance bureau, health commission, hospitals, IT support teams, and finance department; without the participation of every stakeholder, the initiative cannot move forward, and if decision-makers across departments cannot reach consensus, the project is guaranteed to fail. Resource fluidity enables institutions to reallocate skilled professionals and urgently needed funding to high-priority critical issues, rather than clinging to entrenched departmental silos and hoarding resources to avoid contributing to the organisation's overall challenges.

The development and effectiveness of these three dimensions are driven step-by-step by leaders' specific practices, while also being constrained by the various administrative rules that govern organisational operations—the formal institutional frameworks can help the entity uphold baseline standards but may also tie

stakeholders' hands, limiting the scope for these three dimensions to grow.

4. Digital Leadership as a Public-Management Capability

4.1 Strategic sensemaking

The priority for a public-sector digital leader is not to fixate on any specific new technology, but to first align technology with the public problems it aims to solve. Rather than immediately promoting a self-proclaimed “best” technical solution, they first systematically clarify the core service gaps to be filled, the policy bottlenecks that impede implementation, and the pain points that hinder cross-departmental collaboration. Only after these real problems are laid out on the table do they assess whether the digital tools at their disposal can genuinely address those gaps.

Clarifying the strategic landscape and determining the appropriate direction—what this paper terms strategic sensemaking—also depends on two further layers of awareness. First, leaders must proactively surface the uncertainties that accompany transformation, rather than impulsively committing all resources to digital transformation. Second, they must specify which groups could be excluded from accessing convenient services if all service channels move online, such as older adults who cannot use smartphones or residents of remote areas lacking high-speed internet access, so that these groups are not left behind in the drive toward digitalisation.

In parallel, leaders must balance two competing narratives while remaining unbiased toward either. One narrative is the market's ubiquitous “innovation-first” rhetoric, which depicts failure to adopt new technologies as being out of date. The opposing narrative rests on hard empirical evidence, which requires estimating the cost of implementing a new tool, assessing its ability to withstand cyberattacks, determining whether the vulnerable populations described above can use it, evaluating whether user privacy can be protected, and examining whether the organisation's staff and processes can support the new tool, rather than approving projects based solely on optimistic claims.

According to Mergel et al. (2019), for large-scale digital transformation in the public sector to be successful, the key focus needs to be on stakeholder relationships and organisational culture rather than on remaining equal to technological advancements. It is necessary to develop an organisational story that connects everyone, ties every penny and all investments in digital transformation efforts to the fundamental purpose of public services, and establishes a way to measure whether the investments have resulted in benefits for citizens. This will help prevent organisations from falling into the trap of developing a project that satisfies political requirements but consumes significant resources, leaving the organisation divided and with fragmented processes unchanged.

4.2 Cross-boundary mobilization

Public sector digital transformation cannot be achieved by any single department working in isolation at any stage; it requires uniting all relevant stakeholders to collaborate. The list of stakeholders to coordinate is extensive: policy units that set direction, operational departments that deliver direct public services, IT teams that manage technology, legal staff that oversee compliance, finance teams that manage budgets, procurement departments that manage acquisitions, frontline employees who serve the public daily, technology vendors that provide technical support, and ordinary citizens who rely on public services. No single link can be omitted for the system to function. However, when many departments are involved, formal decision-making authority is rarely concentrated in a single office, and no single actor can unilaterally command all other stakeholders to align.

To be an effective digital leader, one must proactively build cross-departmental and cross-boundary collaboration bridges. Leaders must co-develop shared standards that all stakeholders can adhere to, preventing incompatible systems that block data transmission; negotiate equitable cross-departmental data access rights, preventing any stakeholder from hoarding data to block sharing; establish joint governance frameworks

where all parties have a voice, preventing blame-shifting when problems arise; and act as a translator between technical and administrative operations, converting IT jargon into plain language that operational and administrative staff can understand, avoiding miscommunication between the two groups.

According to Tangi et al. (2021), management competence and coordination within the organisation are key factors enabling the successful transformation of digital government. In contrast, the key barriers are outdated regulatory systems, a lack of interdepartmental coordination, and conflicting organisational incentives.

In cases where several government bodies perform public service functions, they share resources. They cannot coordinate their priorities; leadership that can coordinate the actions of all stakeholders becomes very important. While a mandate from an upstream government body will help start the transformation process, it will not sustain it or prevent it from stalling midway through implementation without the real support of all levels of the public sector, from top management to the bottom.

4.3 Responsible resource reconfiguration

Every decision made by leadership directly affects whether the organisation's resources can be reallocated to emerging priorities. These reallocatable resources may include budgets held by individual departments, staff assigned to fixed positions, or even access to government data, all of which must be extracted from low-priority legacy tasks and invested in more urgent new directions. Specific resource reconfiguration efforts include assembling cross-disciplinary, cross-departmental teams, revising outdated job role authorities that previously blocked process flows to adapt to new work rhythms, allocating dedicated funding to prototype test new, unproven solutions, upgrading legacy procurement systems that cannot meet current needs, and upskilling the entire organisation to use digital tools effectively.

However, there are also basic rules that must be followed within the governmental system. Every procedure related to the reallocation of funds must pass through an audit, and all its steps must be authorised by law and not subject to any alterations. The use of the word “responsible” points out two key aspects. Firstly, every change needs to include proper supervision measures proportionate to the risk involved, not those designed to circumvent regulations to achieve higher speeds. Secondly, responsibility needs to be defined for each step and its main protagonist.

Proposition 1: Digital leadership is positively associated with strategic agility through strategic sensemaking, cross-boundary mobilisation, and responsible resource reconfiguration.

5. Strategic Agility and Performance

The performance of the public sector has never been an objective viewed from just one perspective, and the spectrum of results is not limited to task completion alone. The outcomes to be measured include everything from how fast the services are provided, the efficiency of any expense, accessibility of new services to common people, reliability of services to avoid frequent disruptions, upskilling of personnel to match new challenges, innovativeness of the initiatives that address emerging challenges, responsiveness to the demands, transparency of administrative processes to fight corruption, and, finally, satisfaction of the people with received services.

To reach these results, there is usually some tension between goals that cannot be achieved at once. For example, automating any previous manual process to reduce expenses is easy. However, it often runs counter to the principles of procedural justice, since ordinary people cannot challenge algorithmic decisions and have no opportunity to appeal. At the same time, providing inclusive digital services to everybody requires the organisation to maintain staffed face-to-face services and assisted access channels to provide access for those who are unable to use smartphones or online services. The sensitivity to change that helps detect previously unnoticed

bottlenecks and new public needs allows institutions to use this sensitivity to improve their performance. The unity of leadership, which means the leadership is coordinated across different departments, prevents them from duplicating efforts and from pursuing conflicting initiatives that could lead to chaos within the organisation. Resource fluidity, which means it is possible to allocate resources flexibly, helps the institution react appropriately to changing priorities during unexpected public crises or changes in priority areas by the central government. All three capabilities guarantee that every dollar spent on digital technology is spent on solving public problems for which the organisation exists and, therefore, prevent any wasteful expenditure on performative digital transformation to fulfil political expectations.

It should be noted that the strategic agility described above is not a chaotic approach to change, with endless random changes lacking any strategy. The constant changes in organisational structure and processes will drain employees and make public services unstable and unreliable. Nevertheless, mature strategic agility includes the ability to decide when maintaining stability brings more public value; it is not a chase after new demands but rather tracking external developments and resisting the temptation to change for change's sake.

Proposition 2: Strategic agility mediates the positive relationship between digital leadership and public sector organisational performance.

6. Bureaucratic Rigidity as a Boundary Condition

6.1 Protective bureaucracy

Clear rules and procedures are in place to carry out many critical functions. These include providing an equal playing field for everyone, preserving the institution's accumulated knowledge, adhering to safety standards, and controlling every penny of public money to avoid waste. Being based on the principle of documenting all actions, they ensure transparency; the division of core responsibilities

among several positions eliminates the possibility of abusing power from the very beginning. The digital leaders should not ignore such an important means of protection. Therefore, the implementation of radical changes presupposes identifying the regulatory rules relevant to their initial purpose and revising the framework. This is why they align with the needs of the modern digital environment.

Thus, for example, the audit rules for the public procurement procedures represent the necessary protection. They cannot be discarded at random; however, artificial intelligence can be used to replace such obsolete and rigid requirements, along with the corresponding long-term, slow approval procedure. However, what should replace them? It may be modular contracting, open public procedures, and staged deliveries according to the set milestones. As another example, restrictions on cross-departmental data sharing were introduced to protect personal data, which is quite reasonable and important. However, such a general ban on data exchange, with no exceptions, would make it impossible to implement citizen-centric public services that require information from different departments, because no department would share its data, leaving citizens to go through a long and difficult process. It is only possible to design an effective, carefully tailored approach to determine the line between the mechanisms of protection needed by the public and the old-fashioned legacy rules that have become unnecessary.

6.2 Restrictive bureaucracy

Where rule becomes an end in itself, where power is vested in a distant senior management rather than local operations, where knowledgeable teams are denied participation in the decision-making process, where the default information policy favours secrecy over transparency, and where the cost of mistakes is far greater than the cost of indifference, then rigidity ceases to be a protective measure and turns into a restrictive one. Over time, these conditions weaken an organisation's strategic responsiveness, because frontline teams that

engage with the public daily and can identify real, on-the-ground needs are unable to transmit essential first-hand information to senior decision-makers, who are then forced to base their choices on outdated reports and therefore cannot reflect genuine changes. At the same time, these conditions entrench departmental silos by ensuring that no unit is willing to challenge another's authority or assume additional work, thereby undermining the leadership consensus that should exist; they also freeze core resources, such as personnel and funding, in place, making them incapable of being reassigned to where they are most urgently required and effectively disabling the organisation's capacity to adjust its resources..

Political personnel turnover further entrenches this rigidity. Officials in positions of power are already reluctant to test new approaches if a project they lead suddenly faces a shift in organisational priorities, leading to the cancellation of recently allocated resources, or if they are forced to bear full responsibility for even minor errors, the risks outweigh the benefits, leading them to avoid all new initiatives and serve out their terms in complacency. Conversely, with long-term, stable political support, managers can secure sufficient legitimacy to avoid the fear of excessive punishment for proactive work and confidently advance cross-departmental reform. In short, the roots of bureaucratic rigidity lie in organisational and institutional structures and cannot be explained by the negative attitudes or laziness of individual frontline employees. Shifting all blame to frontline staff provides no path to resolving the problem.

Proposition 3: Restrictive bureaucratic rigidity weakens the positive relationship between digital leadership and strategic agility.

Proposition 4: Legitimacy-preserving rules strengthen the relationship between strategic agility and sustainable public performance when they are proportionate, digitally adapted, and accompanied by clear decision rights.

7. Employee Capability and Psychological Safety

The implementation of a digital strategy will never depend solely on acquiring systems or developing plans, but primarily on every employee within the organisation. Once the process of digital transformation starts, everything changes for all employees – from their professional identity to their interactions with the citizens receiving services from them. If they fear that automation will deprive them of their jobs, that machines will take their place, and that any error of theirs will be made public with no opportunity to correct it, they will resist digital transformation, whether openly or secretly. Even if they comply outwardly, they will do only the minimal things and will never put in more effort at work. To avoid such an outcome, leaders responsible for implementing digital projects need to undertake three concrete measures: firstly, invest money and efforts in overcoming the gaps in the skill set of their teams; secondly, involve in the process of redesigning workflows frontline workers that deal directly with citizens; thirdly, create a psychologically safe space where any employee who finds flaws in the digital system or in its functioning can say anything without fearing to be blamed for it.

The skills that need to be acquired include the following: ability to understand and analyze data (data literacy); ability to participate in process redesign (operational capacity); ability to identify and guard against cyber threats and protect data (security awareness); ability to make right decisions in ambiguous situations (ethical judgment); and ability to work in cooperation across various departments (collaborative capacity). The training on how to acquire the skills mentioned above should not be conducted using a one-size-fits-all approach; it has to be tailored to specific tasks and aligned with employees' work processes to give them the opportunity to use the newly acquired skills right away. Apart from training employees, they have to be allowed to voice their concerns. They should not be afraid to say that the objectives set before their supervisor are too unrealistic or that the introduction of a new digital system can

undermine citizens' access to services, without fear of the consequences. The participation of employees in transformation at this level will result in two benefits: the system they create will match the organisation's needs and not become a useless decoration, and the decades of experience accumulated by frontline workers will not be wasted in the course of the transition.

Proposition 5: Employees' digital capability and psychological safety strengthen the indirect effect of digital leadership on performance through strategic agility.

8. Integrated Management Framework

This paper's proposed management framework is anchored in concrete actions that put digital leadership into practice. To begin with, strategic sensemaking enables the whole organisation to develop the attentiveness needed to identify environmental shifts, ensuring that new requirements and emerging problems are handled in real time. In addition, cross-boundary mobilisation links leaders who would otherwise be divided by departmental silos, removing siloed work and generating shared momentum to advance initiatives. Finally, responsible resource reconfiguration relaxes the earlier rigid limits on resource allocation by steering core inputs such as personnel, funding, and data toward the most urgent priorities. Taken together, these three capabilities foster the strategic agility examined in this paper. This agility, in turn, drives improvements in the organisation's overall performance: it ensures that problems and solutions are tightly aligned, preventing misaligned approaches; it streamlines cross-departmental collaboration, eliminating constant conflict over resource competition; and it enables flexible adjustment of project implementation methods when new challenges emerge, rather than persisting with a failing strategy. Conversely, disruptive, overly rigid bureaucratic practices undermine employee capability building, which underpins the entire model. At the same time, the legitimacy-safeguarding institutional mechanisms ensure that outcomes are sustained and do not deviate from their original purpose.

As long as employees have the necessary skills to perform their work and operate within a psychologically safe environment where they can speak freely, the entire model can be implemented smoothly, with no mid-process bottlenecks.

This model directly rejects two common and deeply flawed interpretations of digital transformation. The first is technological determinism—the mistaken belief that simply procuring digital tools and implementing new systems will automatically improve organisational performance. Digital tools are merely pre-existing resources; their ability to create value depends entirely on the complementary capabilities of the organisation and employees that use them, and they cannot generate value on their own. The second flawed view frames agility as a panacea, claiming that greater agility is always better. Sustained public value requires an organisation to keep evolving with its environment while maintaining enforceable baseline rules, so that each decision remains aligned with its central goal of serving the public. In this respect, for managers facing the challenge of meeting both needs, the important thing is to create effective governance arrangements. Such arrangements should have clear aims rather than being used solely as instruments of regulation; they should be transparent to everyone, which will ensure that none of the parties uses them to manipulate outcomes; and they should be commensurate with the level of risk being faced.

9. Proposed Empirical Design

This theoretical framework cannot be treated as a simple, internally coherent thought experiment; it must be tested and validated through empirical research, which can be pursued via a multilevel study of public organisations. To carry out this study, the initial step was to determine the appropriate research participants: government agencies operating at the federal, provincial, and local levels that have implemented major digital initiatives, and to gather data from both managers and ordinary employees within these agencies. What is the appropriate sample size?

Approximately 40 such agencies are sufficient, with 10–15 individuals from each agency completing the survey questionnaires. This sampling method is far more effective than collecting scattered, uncategorized individual data, as it supports more robust multi-level analysis. In contrast, disparate individual data cannot capture the nested relationships and effects within a single agency, leading to unsubstantiated analytical results.

There are clear guidelines for who reports on which metrics: digital leadership capacity and team psychological safety are best assessed by frontline employees, who experience these factors most directly; therefore, these data are self-reported by staff, while strategic agility is best evaluated by managers who make daily decisions and cross-functional team members who conduct inter-departmental coordination, who have the visibility to assess this metric. Speaking of the agency's overall performance, relying solely on subjective assessment is inadequate. The overall performance should be measured by combining perceptions with objective administrative data, such as service processing time, share of services completed online, complaint resolution rate, system uptime, and user satisfaction. Similarly, when it comes to measuring bureaucratic rigidity as the central indicator, there is no point in using just one approximate question for measuring it; the indicator should be divided into four dimensions, and each of them should be considered separately: if all decisions need the approval of senior officials, if procedures are too rigid to be changed, if departments prefer their own interests rather than cooperating, and if resource shortage is a hindrance to service provision.

To reduce bias that could result from collecting all data from the same group of respondents under the same survey administration, an issue commonly referred to as common method bias, we will gather data across multiple waves separated by time intervals. In the first wave, we will collect information only concerning leadership practices. After several months, a second survey will be administered to assess

strategic agility, and, following an additional interval, all performance-related data will be collected. The staggered timing of these waves is intended to filter out confounding factors.

In addition to distributing surveys, we will conduct interviews and review each agency's public documents and internal records. This is to distinguish the "official reform" presented in public-facing materials from the actual changes implemented within the agency, thereby preventing the misclassification of rhetorical claims as concrete actions.

For comparisons across levels of government, we will first test measurement invariance to confirm that survey data from the federal, provincial, and local levels are comparable, thereby preventing underlying flaws in comparative findings that arise from differing interpretations of survey questions. The full study must also meet a set of mandatory requirements: ethical approval must be obtained before any data collection begins; respondents must be fully informed about all aspects of the study and provide informed consent; all respondents' personal information must be completely anonymised; and sensitive institutional data must be safeguarded in accordance with all regulatory standards. None of these requirements may be excluded from the process.

10. Discussion

The core theoretical contribution of the framework proposed in this study is its designation of strategic agility as the intermediate mechanism that connects leadership to ultimate performance. Many prior studies implicitly assume that leadership directly drives organisational performance, with no need for an intermediate bridging factor. However, the logic of this framework is far more robust and rigorous than those direct-effect conclusions. Furthermore, we do not treat concepts such as leadership and strategic agility as abstract ideas; we decompose them into tangible, observable, specific actions so that this model can be used for large-scale empirical testing and applied in

practice to public-sector manager training to help them develop usable management capabilities.

Our close analysis of bureaucratic rigidity is no less important a development in the area. The contemporary discourse on public sector reform assumes that administrative regulations are merely obstacles, implying that all of them are unnecessary. However, in the context of the classical theory of public administration, things go to the opposite extreme when the ability to follow every procedure is seen as the indicator of good governance. Our framework resolves the dilemma by indicating that regulations are neither inherently good nor bad – they can enhance the legitimacy of the process as a whole by maintaining a minimum level of public accountability. However, they can also hamper digitalisation and cause various governance problems. Therefore, the competent digital leader has to distinguish between the two separate roles of the rule and develop approaches to administrative governance that differ from traditional ones but do not violate the basic principles of accountability to serve the public interest. When applying the framework to emerging economies, the leader should also consider the region's local infrastructure and institutional capabilities. Even though there is only one country, there are considerable regional differences in network reliability, cyber protection, data compatibility, the degree of reliance on foreign providers of digital products, the presence of professional staff within the government, and people's ability to use digital technologies. Although the countrywide centre for digital governance can help save money through economies of scale, it introduces one important vulnerability – its failure would mean the breakdown of all essential public services in the country. Digital systems, bought from developed countries on an out-of-the-box basis, are not compatible with local languages and administrative procedures and have low usability. In such a way, in such a context, digital leadership has to satisfy the needs of the framework while also taking into account local

features and focusing on the gradual development of local capacities.

10.1 Public value and performance tensions

Evaluation of digital transformation outcomes in most countries at present is limited by three rigid criteria: the annual volume of online services processed, the average decrease in processing time for each service compared to traditional methods, and the average cost reduction per service through digitalisation. Although these indicators allow one to track short-term achievements easily, they do not account for the public interest that should be preserved. Although some services provide faster processing of applications online, citizens with poor internet access, people who have disabilities limiting mobility, people with low literacy level and migrants, who do not speak the official language of the country, remain completely excluded from the services available. Also, some services employ algorithms for determining the order of application processing. However, ordinary citizens have no chance to find out the reason for the low priority of their applications, and there is no way to question the obscure decision. To assess public value properly, it is necessary to develop an indicator framework that takes into account all the conflicting aspects – operational efficiency and service effectiveness, access to services for all population groups, legitimacy of all processes, protection of citizens' privacy, and resilience of institutions to emergencies.

Additionally, the inclusion of a timeline of transformation is a key element of successful long-term reform. During the initial stages of digitalisation, the overall efficiency of operation may decrease: it is necessary to train the employees of organisations to work with new technology and to keep dual operation of the legacy offline system together with the newly installed online system to avoid any problems in providing services to citizens until the new system becomes stable. Such a temporary decrease in efficiency is expected. On the contrary, some projects can demonstrate good efficiency at the very beginning of their launch. However, if there

is no investment in maintaining the system, monitoring data quality, and training employees, the initial efficiency will inevitably decline. Thus, the evaluation of the success of a digital project should include not only efficiency at launch but also transition costs during the transition period and the sustainability of operations in the long run. All this is supported by the main claim of this research: the development of strategic leadership builds organisational capabilities that create long-term value, rather than viewing "launch completion" as a one-time achievement.

The alignment of political and administrative leadership is another critical factor affecting the sustainability of digital transformation. The public sector digital reform is carried out in two distinct leadership fields – political and administrative. Each domain has its own restrictions and advantages. Political leaders can obtain formal authorisation for their project, secure dedicated financing, and gain public support to launch a large project. However, due to their limited time in office, political leaders are inclined to focus on quick, easily observable projects, rather than on long, hard-to-implement ones such as infrastructure and process redesign.

In contrast, career civil servants can sustain reform efforts over the long term, preserve institutional memory, and support multi-year reform programmes. However, excessive accountability for mistakes makes people unwilling to take risks when developing innovative projects. A well-elaborated governance framework allows us to distinguish the roles and responsibilities of both parties: political leaders set priorities in accordance with citizens' needs, maintain legitimacy and commitment to citizens, and administrative leaders build internal implementation capabilities, establish professional standards of operation, and launch the project successfully.

However, leaders from both domains do not always cooperate, and bureaucratic rigidity can exacerbate conflicts between them, hindering reform efforts. Some digital platforms are introduced in a rush to meet deadlines set by political leaders, which can conflict with

established institutional constraints such as compliant procurement procedures, high security standards, and inclusive service delivery. Thus, the digital leaders working within the administrative team require formal tools to voice their professional concerns about the project and to document potential risks during implementation, without becoming opponents of the reasonable policy objective. Tools such as third-party audits, phased introduction of the platform, and regular public reporting can reconcile the political need to meet deadlines with the administrative need for long-term accountability. In this way, we can overcome contradictions that otherwise would harm public value.

10.2 Interorganizational agility

Numerous public affairs cannot be addressed by the government department alone. Healthcare, social welfare, tax collection, public education, urban services, and emergency disaster management all require cooperation and coordination among agencies to ensure no stakeholder is overlooked in the process. Suppose one organisation acts swiftly and flexibly. However, if other partner agencies are unable to exchange necessary data or make decisions together, then there will be no way for the work done by that organisation to yield any concrete result. Therefore, strategic agility cannot be studied solely in terms of an organisation's internal conditions; it should be analysed in terms of two aspects – the agility of individual organisations and the condition of the collaborative network of all the organisations involved, with the latter being equally important. Several conditions should be met to activate the entire network of collaborative cross-organisational activity, including unified standards applicable to the whole network, common rules of governance acceptable to all stakeholders, interoperable infrastructure connecting various platforms, and formalised processes for conflict resolution and dispute mediation. Centralisation of standard-setting processes at the highest level of the hierarchy

helps align all stakeholders in a very short period of time. It minimises the time required to negotiate and develop unified standards. On the other hand, it leaves no room for local adaptation of standards to local conditions, thus restricting flexible responses to front-line-specific challenges. Conversely, decentralising the standard-setting process to local jurisdictions facilitates local experimentation and innovation. At the same time, it makes the network more siloed and increases the risk that stakeholders will have divergent goals and be unable to coordinate efforts and unite resources. The main task of digital leadership lies in developing a balanced federal model that includes core shared elements operating throughout the network to avoid duplication of development across localities and the delegation of responsibility for implementation and adaptation to local levels. Analysing the whole collaborative network as a unit of analysis significantly expands the concept of dynamic capabilities, which has traditionally focused on private companies.

11. Managerial and Policy Implications

There should never be any public-sector digital initiatives that pursue digitisation trends without solving some well-defined problem of public value, for instance, difficulties faced by citizens, and it needs to be based on fair evaluation criteria going beyond single-standard evaluations. Representation on governance committees should be broad and include workers, policy-makers, technical experts, legal and financial professionals, as well as citizens, so that decisions are not made from an insular perspective. Before implementing initiatives, approval processes and data flows should be documented, and it should be decided which regulations need to be retained, scrapped, or revised for compatibility.

Leadership development should go beyond standard management training; it should cover digital strategy, data governance, ethics, procurement, change management, and stakeholder engagement throughout the entire transformation journey. To successfully lead technical teams, leaders must be technically

fluent, while technical experts need to understand public law and policy to develop viable, community-oriented solutions. Reassignment of responsibilities between functional groups improves communication and dismantles silos, which enhances cooperation. Assessing individual performance should focus on iterative learning and actual public results rather than on the timely completion of projects. Pilots should clearly formulate the hypothesis and create formal guidelines for the protection of the community. It should also be determined in advance when the project should be scaled up in case of success or terminated in case of failure. Digital inclusion is a fundamental principle; public services should be developed not only for citizens who have smartphones and internet access, but also for those who do not.

12. Limitations and Future Research

The overview of key concepts presented here draws on a wide range of perspectives to create a theoretical framework for digital leadership and highlights the importance of empirical verification. Digital leadership in the public sector differs from that in private companies in that it operates within unique political and legal accountability mechanisms that necessitate measurement tools specific to these settings. Future research should focus on organisations with similar technological contexts but different leadership and governance systems. Longitudinal studies are needed in order to observe the development of strategic agility. Measurement scales should reflect the core activities of leadership, such as framing, stewardship, coordination, evidence-based management, capacity-building and responsible innovation, so that strategic agility is not confused with reactive crisis management. In the assessment process, it is important to take into account the perspectives of citizens and frontline workers rather than top management, and the measures should be consistent at all levels of government – federal, provincial and local.

Research should factor in ending projects as a vital component of strategic agility, rather than

focusing solely on newly rolled-out projects. Examining abandoned initiatives can help surface political and procedural barriers that are often obscured in accounts of success. Also, the negative fallout of digital transformation, such as burnout, power centralisation, surveillance, cybersecurity risks, and social exclusion, ought to be assessed through focused research. Longitudinal tracking should confirm whether performance remains sustained beyond changes in leadership or vendors. Research spanning countries should not overlook differences in institutional setups.

Key to this, future efforts must centre on equitable public value and eschew aggregate efficiency metrics that obscure the harms borne by marginalised populations. Public value stays central to performance assessments of digital services when researchers blend citizen input from surveys, complaints, usability testing, and participatory evaluations with internal metrics.

Conclusion

Digital transformation enhances public-sector performance only if leaders turn technology into an organisational capability. By using strategic sensemaking, coordinating efforts across boundaries, and responsibly reallocating resources, public organisations cultivate strategic agility and stay ready for shifting needs. By design, bureaucratic rules can either narrow how this is carried out or help ensure it stays legitimate. Accordingly, effective digital leadership integrates adaptability with accountability and assesses transformation in terms of public value, not technology adoption alone.

Declarations

Ethical Considerations and Declarations

This study was reviewed and approved by the Research Committee of the NUST Business School (NBS). This study was conducted in accordance with the ethical standards of the approving institution.

Declaration of Generative AI and AI-Assisted Technologies

During the preparation and revision of this manuscript, the authors used ChatGPT and Paperpal to support language editing, grammatical correction, and improvements in clarity and readability. These tools were not used to generate or modify research data, conduct statistical analyses, fabricate references, or make substantive research decisions. The authors critically reviewed and verified all AI-assisted content and accept full responsibility for the accuracy, originality, and integrity of the published work.

Consent to Publish: Not applicable. This study did not involve any person's data in any form (including images or identifiable quotes) that would require explicit consent for publication.

Conflict of Interest: The authors declare no conflict of interest.

Funding Statement

The authors did not receive any funding or financial support for this study.

Clinical trial number: not applicable

Data Availability: Data is available upon reasonable request from the corresponding author

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