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## **Institutions, resources and dynamic capabilities: towards a theoretical understanding of the digital transformation of public administrations.**

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**Abstract**

The implementation and use of digital technologies are two challenges that public administrations are currently facing. No sector or organization is immune from the effects of digital transformation. The potential of these technologies is often wider than that of administrative procedures, decision-making circuits or modes of relationship with users. Under these conditions, complete public management models are frequently modified. Faced with this dynamic, the literature on e-government remains largely descriptive or technical, leaving a theoretical void as to the explanatory mechanisms of digitization in an institutional context marked by specific constraints. This article sought to fill this gap by proposing a rigorous conceptualization of public digital transformation and by mobilizing theoretical frameworks from strategic management to grasp its determinants. This article uses RBV, institutional theory and dynamic capabilities to explain the role of internal, external and adaptation factors in the digital transformation of public administrations. The synthesis of these three theories in an integrative analytical framework proposes a structured reading grid making it possible to better understand this organizational change within the framework of public entities.

**Keywords:** Digital transformation, dynamic capabilities, institutional theory, public administration, RBV

## Introduction

The incorporation and use of digital technologies are two challenges that public administrations are currently facing. No sector or organization is immune from the effects of digital transformation (Dąbrowska et al., 2022). The potential of these technologies is often wider than that of administrative procedures, decision-making circuits or modes of relationship with users (Bader & Kaiser, 2019). In these conditions, complete public management models are frequently changed (Millard, 2023). Under the impetus of public policies of digital transformation and the objectives of modernization of the administration driven by globalization, digitalization is no longer limited to the automation of tasks; it involves a profound reconfiguration of the relations between the government and citizens (Andersson et al., 2022).

In the light of these consequences, the digital transformation has become a priority of the reform and modernization programs of the public administration (Srivastava et al., 2025). Decision-makers and public managers anticipate that new digital technologies will make a clear contribution to the overall efficiency of their entities, especially their benefit provided to citizens (Balaji, 2025). Moreover, faced with the need to remain efficient and legitimate in the exercise of public service, public managers are obliged to formulate and implement strategies that will take into account the implications of change and generate better outcomes (Irani et al., 2023).

Unfortunately, there are many examples of administrations that have been unable to keep up with the new digital reality, especially in developing countries (Plantinga, 2024). This is explained by the growing gap between the expectations of users, now accustomed to fluid and personalized services offered by the private sector, and administrative services that are still fragmented, not very interactive and often wrapped up in endless bureaucracy (Raso & Adelmant, 2024). Besides, the lack of understanding of these organizational and institutional issues leads public managers to disastrous results in terms of implementing and using digital technology (Faro et al., 2022).

From a different perspective, this transformation is linked to the evolutions that digital technologies can bring about in the public management model, which translates into a change of the services rendered, organizational structures or by the automation of decision-making processes (Vigoda-Gadot & Mizrahi, 2024). Digital transformation is a complex subject that affects many or all the activities of a public administration (Rajhlina & Patrusheva, 2022).

Unlike the private sector, where competitive logic guides technological adoption, the public sector has always tried to reconcile the imperative of innovation with legal constraints, public service continuity obligations and principles of neutrality and equal treatment of users (Yeung, 2023).

In this context, public managers are facing a double challenge. On the one hand, balancing the exploration and exploitation of resources to achieve the expected organizational agility, a necessary condition for the success of the transformation, on the other hand, preserving the founding principles of legality, legal security and bureaucratic rationality (Jaafar et al., 2026). At present, researchers often lack clarity about the theories and concepts to hold to analyse this digital transformation (Markus & Rowe, 2023). As a result, they risk to neglect important details or solutions that are more favourable to specific situations in public administration, which could have unforeseen adverse consequences on the understanding and conduct of digital transformation policies. Thus, it appears necessary to have an integrating theoretical framework capable of accounting for both the internal resources that can be mobilized, the external institutional constraints and the organizational adaptation mechanisms specific to the public sector.

This paper aims to answer this objective, through a conceptual and theoretical reflection on the digital transformation in public administration. It is organized as follows: section 1 presents the principles of digital transformation and its specificities in the public sector; section 2 details the theoretical frameworks of analysis that can be mobilized, namely the resource based view theory (RBV), institutional theory and dynamic capabilities. Section 3 proposes a synthesis of these contributions in the form of an integrative analytical model. Finally, the conclusion deals with the assessment of the various approaches and summons the theoretical tracks to be adopted and developed.

## **1. Conceptual articulation of digital transformation in the public sector**

### **1.1. Digital transformation**

Over the past twenty years, the concept of “digital transformation” has been increasingly used in managerial and academic discourses, although it is largely misinterpreted within organizations. To understand this contradiction, it is first necessary to define the term “digital” in an organizational context. According to Raso & Adelmant (2024), this concept corresponds to a major change in management methods. Similarly, Koch et al., (2022) suggest that digital

is a new way in which organizations direct their operations, often relying on new processes having a computerized character. By extension, this term includes all the tools that allow employees to communicate and use digital content (Serpa & Ferreira, 2022). However, Dorner and Edelman (2015) indicate that this notion does not mainly refer to a technical process, but constitutes an innovative approach to operations management, structured around three essential principles: the creation of value via digital technologies, the improvement of processes influencing the user experience, and the establishment of essential resources to support these initiatives.

On the other hand, digital transformation presents itself as a global process encouraging the organization to revisit its modes of collaboration with its stakeholders, its internal processes and, in some cases, its economic model (Dudezert, 2018). This global approach is verified by the previous research of Brunetti et al., (2020), which characterize digital transformation as the modifications induced or influenced by digital technology in all dimensions of human life, resulting in a world increasingly lived by means of information technologies. This last definition has been gradually improved by work in the field of the digitalization of organizations. In this sense, the IBM Institute for Business Value (2011) thus highlights the growing economic importance of digital technologies, encompassing the design of digital products, the development of e-commerce as well as the transformation of business models under the joint influence of the mobile revolution, social media and big data.

Moreover, the study carried out by the MIT Sloan Management Review & Deloitte (Kane et al., 2015) introduces the concept of “digital maturity”, highlighting that true transformation depends more on the organizational capacity to integrate technologies to transform its activities than on their mere availability. In this perspective, Imran et al., (2021) distinguishes three interdependent dimensions of digital transformation: the organization, operational processes and technology, positioning the user experience as the pivot of the organizations that have carried out this transformation. Lemola (2024) enriches this perspective by defining digital transformation as all the modifications affecting the activities, processes and skills of organizations via new technologies. This collaborative dimension is also highlighted in the work of Hwang & Seo (2025) who demonstrate how the development of collaborative platforms has encouraged working modes based on co-development and mobility, thus illustrating what Pinch & Bijker (1984) designate by the “interpretative flexibility of technological artifacts”.

## 1.2. Digital transformation in the public sector

The application of new technologies at the core of public administrations has in recent decades stimulated an increasing interest from academic research, feeding the idea that the public sector was bound to undergo a profound transformation under the effect of technological developments (Kokkinakos et al., 2016). The public Internet has been the object of research since its appearance in the 1990s, with the idea of the formation of a more horizontal and decentralized network society driven by the intense use of digital technology (Papacharissi, 2002). Nevertheless, this optimistic vision must be criticized. Thus, the results of the implementation of digital technologies are generally based on the actual use of these innovative instruments within specific sociotechnical assemblies, where the technique alone does not decide the outcome of the changes undertaken (Kassem et al., 2024).

### 1.2.1. An ambiguous concept and a sociotechnical approach

Although the term “transformation” is commonly used to refer to the changes generated by digital technology in the public sector, its definition often remains imprecise, poorly established or insufficiently analysed (Plesner et al., 2018). In general, this concept designates a fundamental transformation associated with the integration and use of digital technologies within public organizations. Thus, based on an empirical study carried out in New Zealand, O'Neill (2009) suggests differentiating between two distinct meanings of the concept of transformation, highlighting that this term encompasses various realities depending on the institutional contexts and the intended purposes.

Moreover, this conceptual uncertainty requires a thorough analysis of the relationships between technology and society. Instead of systematically generating anticipated results, digital technologies are integrated into mutual interaction processes with their social, institutional, legal, political, economic and cultural context (Pashentsev et al., 2019). At each phase of the creation, development and exploitation of digital technologies, various technical alternatives are selected according to social criteria. These decisions, often automatic, result from a multitude of factors whose joint interaction simultaneously directs technological evolution as well as the dynamics of social change associated with it (Dattée & Weil, 2007). The model of social construction of technology, proposed by MacKenzie & Wajcman (1985), makes it possible to understand why an identical digital technology can be developed, implemented and tested in various ways depending on the context, leading to heterogeneous and frequently inanticipable consequences (Williams & Edge, 2000). It also highlights the gap that is often

present between the initial anticipations related to a technology and the reality of its use, highlighting the repeated disappointments of digital projects in generating the expected impacts (Alvarez-Pereira, 2019).

According to this perspective, the route to the results of a digital transformation project can be envisaged as a sophisticated negotiation process between various stakeholders and technological, social and institutional elements in a specific context. In this bilateral ecosystem, users also present themselves as co-creators of the technology (Dobrolyubova, 2021). Several studies corroborate the idea that digital transformation in administration is not a logical, rapid or sequential process. It is rather characterized by its complexity, its unpredictability and its evolutionary character (Eppel & Lips, 2016; McLoughlin, 2013). Thus, digital technologies and information are part of complex sociotechnical structures, including individuals, organizations, norms, public values, legal conventions, budgets, policies and professional practices (Pashentsev et al., 2019).

### **1.2.2. Origins and evolution of digital technologies in the public sector**

It is generally considered that the digital evolution of the public sector began with the integration of the Internet by governments in the 1990s (Margetts, 2008). However, the use of information technologies in administrative management was not an innovation at that time. From the 1950s, the first computers were used to perform basic calculations, including the processing of data during the census in the United States (Haigh, 2001). From 1950 to 1980, governments gradually used large centralized computers to carry out large-scale digital operations, especially in the areas of tax administration, social services and census bureaus (Agar, 2003).

Lips (2019) in his paper pointed to the role of digitalization in the public sector since 1980s. In this sense, the emergence of personal computers constituted a major innovation. Originally built for word processing, arithmetic, data analysis and programming, these devices have fast become a vital element of this new environment. The advent of server-based networked computing saw computers connected to the Internet and a gradual move from centralized computing to decentralized network architectures (Lips, 2019).

Senbekov et al., (2020) argue that the trend continues in the 2000s with the development of cloud computing, which transformed the decentralized access to data and information together with social networks, mobile technologies, artificial intelligence, robotics and intelligent

systems, all of which have simplified and made more efficient the functioning of public organizations.

However, it is important not to minimize the lasting impact of the first IT solutions. Indeed, governments have persisted in using centralized systems at the same time as decentralized networked solutions, even after the integration of the Internet (Sánchez & Zuntini, 2018). These obsolete systems, called "legacy systems", always have an impact on the trajectories of digitalization. Indeed, administrations are forced to meet the operating and maintenance costs of these infrastructures while investing in the implementation of new technologies (De Luzi, 2024).

### **1.2.3. The maturity models to explain public digital transformation**

In order to analyse the ways of the digital transformation of the public sector, management research has highlighted several models, called maturity models, serving as illustrative tools of the evolution of digitalisation. These contributions aim to offer benchmarks to locate the different stages of digital transformation at the level of public entities (Teichert, 2019). To better understand this evolution, Layne & Lee (2001) proposed a four-phase maturity model. This theoretical framework proposes a progressive classification of the level of digital integration of public services, ranging from simple online visibility to more sophisticated methods of connectivity.

Additionally, Klievink & Janssen (2009) have developed a five-stage maturity model that further specifies this evolution. The initial, so-called startup phase is distinguished by a low degree of interconnection between applications, services and data within government entities. The second phase consists of internal integration, during which the provision of public services and digital technologies are coordinated within each organization in order to establish a single window. The third stage is characterized by the establishment of a national portal offering access to available products and services, accompanied by a personalized digital safe for each citizen, which facilitates access by administrations to personal data as part of service requests. The fourth phase corresponds to inter-organizational integration, during which standardized inter-agency services are consolidated and delivered in the form of a unified service via the portal. Finally, the fifth phase corresponds to an integrated and demand-oriented management, in which the portal warns users' needs by automatically identifying and suggesting the appropriate public services, thus reversing the conventional logic of administrative solicitation.

## **2. Theorizing public digitalization**

### **2.2. Digital transformation and institutional theory**

#### **2.2.1. Public digitalization as an institutional change**

Digital transformation stems from the joint interaction of various innovations generating the emergence of new actors, structures, practices, values and beliefs within organizations and their ecosystems (Gegenhuber et al., 2022). These modifications alter compromise, supplant or enrich the rules established in a specific field. In other words, the digital transformation generates the appearance of new organizational modalities, a renewed institutional infrastructure as well as new fundamental components of institutions (Hinings et al., 20218). This is a contextual force that goes beyond a simple minor adjustment to induce a profound transformation within organizations (Silva et al., 2024). This transition brings about a change from a predominant organizational model, integrating practices, structures and values, to another model (Pache & Santos, 2010; Purdy & Gray, 2009).

Several empirical research provide evidence for this radical dimension. The National Aeronautics and Space Administration (NASA) case, which has embraced “open innovation” using crowdsourcing intermediates to solve pressing innovation problems, exemplifies how an established organization might move to a new organizational form (Gustetic et al., 2015). This transformation needed an intentional task of delimitation of knowledge, aimed at broadening and reconstructing the professional identity of scientists (Hancock & Walsh, 2016). Likewise, Gawer & Phillips (2013) studied IBM’s reaction to the change from a supply chain logic to a product platform logic to lead a digital platform. The company then engaged in institutional work on two fronts: by assuring the support of its external environment with practical and legitimacy work, and by assaulting its internal environment with internal practice and identity work. Xing et al., (2024) also report the situation of a pharmacy in a public hospital, which has introduced a robot to dispense drugs. As a result, this type of action has transformed certain operations, thus modifying the identities and borders of pharmacists, technicians and assistants.

#### **2.1.1. The difficulties of change and legitimacy**

Barriers to innovation and transformation at the organizational level have been a long-standing topic in institutional theory and organizational theory (Barrett & Hinings, 2015; Hinings et al., 2018). Luciano et al., (2025) focus particularly on the many “inadequacies” that have stopped organizations from transitioning from “mechanistic” to more “organic” organizational

structures. Logue et al., (2016) also emphasize that, while the public sector has clear proof of errors and major accidents, opposition to change is more common than effective reform.

Within the framework of institutional theory, these difficulties stem from what is taken for granted in socio-cultural terms and from the way in which the legitimacy of certain modes of organization is linked to questions of logic, power and existing interests (Lawrence & Buchanan, 2017). This is why the approach to digital transformation adopted here is defined as radical and strongly linked to theories and concepts relating to the difficulties of such a change, in particular because of the stakes of legitimacy. As pointed out by Garud et al., (2013), all the studies examined on innovation processes draw attention to the difficulties of change, and a major difficulty lies in the fact that innovations can be perceived as illegitimate. Digital transformation begins precisely when a disruption destroys established management models, value chains and organizational processes, and new arrangements are gradually integrated and institutionalized (Schiavi et al., 2024).

## **2.2. Resource-based view (RBV) and digitalisation of public administration**

### **2.2.1. Digitalisation as an organizational resource**

RBV demonstrates that organizations obtain a sustainable competitive advantage through the exploitation of their capabilities having a unique, precious and rare character (Wang et al., 2026). In the context of digital transformation, RBV suggests that public entities can take advantage of digital technologies to develop distinctive capabilities, in order to improve their performance (Gibson et al., 2021). Sanzo-Perez et al., (2015) emphasize the relevance of RBV in explaining the use of digital technologies and their impacts on the performance of public institutions. To explain these different points of view, Cuthbertson & Furseth (2022) consider that these technologies provide valuable information on how administrations can strategically exploit their assets to succeed. In addition, according to Wang et al., (2026), digital transformation is essential to strengthen organizational performance and allow development firmly based on the resources specific to each institution.

### **2.2.2. Digital transformation as a tool for organizational effectiveness**

In his research, Szymaniec-Mlicka (2014) emphasize the importance of technologies in improving the operational efficiency of the public sector, in addition to its performance. In other words, the strategic integration of digitalization within operational processes allows administrations to achieve unprecedented levels of automation and optimization, thus

significantly contributing to the reduction of laborious manual tasks and redundant operations (McGahan, 2021). This dynamic is manifested by the implementation of innovative solutions, in particular the Internet of Things and large-scale data analysis (Jafari et al., 2026). These technologies offer public organizations the possibility of anticipating the needs of citizens, which leads to a substantial reduction in the costs related to the services offered to the nation (Pee & Kankanhalli, 2016). In addition, this resource, which is digitalization, allows public entities to transparently manage the relationship between officials, as well as communication processes, saving essential for a favorable social climate (Jafari et al., 2026). As a result, digital transformation corresponds perfectly to RBV, which maintains that organizational success is based on the correspondence between internal capabilities and the opportunities offered by the environment (Luna-Reyes et al., 2011).

### **2.3. Dynamic capabilities and digital transformation**

Driven by technological innovation, as well as substantial changes in strategies, structures, processes and cultures, digital transformation is today a structuring characteristic of the organizational world (Guinan et al., 2019). If the technology itself is only one component among others of this change, it notably questions public administrations on their ability to progress sustainably without being forced to a simple surface adaptation. It is in this context that the theory of dynamic capacities seeks to analyse the role of digital technologies in improving the performance of public entities (Verhoef et al., 2021).

In this regard, the observation made by the literature is worrying. Indeed, despite the fact that 80 % of public organizations resort to digital solutions to address their operational difficulties, only 30 % of them complete a meaningful digital transformation (Feroz et al., 2023). This variability can be explained in part by the slowness of the structural changes generated by technological breakthroughs, thus taking longer to materialize in the routines of public administrations (Albino, 2021). Just as dynamic capacities have allowed private entities to reconfigure their value chains for a sustainable digital transformation (De Paula Pereira et al., 2024); they can guide the public sector towards significant improvements, even beyond financial and technical constraints.

Dynamic capabilities are often regarded as a way toward organizational success (Linde et al., 2021). They are related to the ability of an organization to generate, grow and innovate its resources to respond quickly and efficiently to technology innovations and changes in its environment (Wei & Zheng, 2024). These capacities are closely related to the innovation of the

organization's economic model, referring to the integration, construction and reconfiguration of the skills inherent in a specific structure (Vo Thai et al., 2024). The theoretical framework that underpins them, therefore, guides the identification of the abilities needed to integrate, develop and reconfigure the internal and external resources needed for change, notably in the sphere of digital transformation (Castelo & Gomes, 2023).

By supporting the continuity of activities in turbulent contexts, dynamic capacities make it possible to understand how public organizations reach digital maturity when they design and maintain adaptable mechanisms capable of going through successive waves of innovation (Vial, 2019). The management of digital transformation therefore necessarily implies the development of such capacities, especially since the current context is characterized by disruptive technologies, increased competition and increasingly unpredictable user behaviours (Ellström et al., 2022).

In this context, the literature distinguishes three micro-foundations of dynamic capabilities dedicated to digital transformation in the public sector: digital detection, digital input and digital transformation proper (Kowalski et al., 2025). Digital detection embodies the creation of a demand for the transposition of the traditional approach to the digital approach in the formation of organizational strategy.

The process includes the implementation of digital scenario planning and the detection of emerging trends among employees and citizens, relying on technologies such as big data, data analysis and artificial intelligence (Kowalski et al., 2025). Moreover, the main challenge is to anticipate innovative strategies, requiring adopting a global digital vision, while organizing the entity around a digital culture. In addition, Ellström et al., (2022) show that, beyond mastering the tools, it is a question of developing a forecasting methodology, focusing on a receptivity to digital change more than on a purely instrumental adoption of new technologies.

This visionary dimension is all the more crucial since almost 70% of digital transformation efforts do not achieve their main objectives, several public institutions having attributed this failure to the absence of a truly digital-oriented vision (Ellström et al., 2022). Promoting a cultural evolution within the organization, based on communication, creativity and experimentation, then appears essential to solve the challenges of users beyond the only technical skills listed by digital platforms (Linde et al., 2021).

According to Wei & Zheng, (2024) digital input constitutes the second micro-foundation, centred on the innovation of the governance model. At this level, strategic agility is essential to quickly identify the technological opportunities of the market and adopt a flexible position allowing the continuous reorientation of the organization. Several researchers suggest rapid prototyping to strengthen this agility, by simulating examples of strategic decisions via innovation laboratories and viable experiments, which makes it possible to collect feedback from employees and citizens on their experiences (Linde et al., 2021; Wei & Zheng, 2024). The digital transformation pertains to organizational culture, the reconfiguration of government units, and the management of innovation ecosystems, emphasizing the necessity to enhance technical maturity for the transition to commence effectively (Hong-Hue et al., 2024). This improvement requires the integration of digital tools in the training of organizations, accompanied by a balance between the staff and the degrees of promotion within the institution. The redesign of internal structures is only possible thanks to leadership that promotes transformation and decentralization (Wei & Zheng, 2024).

Digital transformation is directly linked to the notion of digital maturity. According to a study conducted within public institutions, digital transformation considers management, connectivity, processes focused on citizen experience, automation, agility and analytics as valuable assets (Albino, 2021). However, to absorb the value created by these assets, better management practices are essential. Digital transformation commences with the incorporation of technology across all domains of operation, rather than being confined to a singular sector (Feroz et al., 2023). Digital maturity assesses an organization's capacity to generate value via technology (Otia & Bracci, 2022). To accomplish this, specific basics are essential: a flexible and secure infrastructure, a structured data domain, open and digitally adept talent networks, a dedication to the partnership ecosystem, and a cohesive citizen experience (Buivydas, 2026).

### **3. Towards an integrative model of the digitalization factors of the public sector**

#### **3.1. Internal factors**

##### **3.1.1. Technological factors**

The digitization of public institutions is essentially based on the potential of information technologies to change how organizations collect, administer, exploit and disseminate information (Calderon-Monge & Ribeiro-Soriano, 2024). The internal technological factors

affecting this process are divided into four complementary dimensions: strategy, data, IT infrastructure and interoperability (Abdella, 2012).

### **A. Digital strategy**

The digital strategy has a double meaning: on the one hand, it refers to an internal management strategy focused on the daily operations of the technological infrastructure; on the other hand, it concerns the process of digitalization of organizational functions and responsibilities (Edelmann & Mergel, 2022). Coming from information technologies and information systems, this strategy aims to modernize the organization by digitizing its hardware and software infrastructure, thus generating data capable of informing management decision-making (Akarkin & Yasinovskaya, 2019). It is divided into three consecutive stages: preparatory phases including the research and planning of a digital campaign, execution phases based on the exploitation of real-time data in order to optimize the dissemination of messages, as well as evaluation phases based on in-depth analyses to adjust communication strategies (Edelmann & Mergel, 2022). Putting in place a strategy coherent with the purpose of an organization and capable of bringing together all stakeholders around essential sociotechnical modifications, are two essential conditions for the success of any digital transformation strategy (Brunetti et al., 2020). The latter must also take into account the skills and resources available, while ensuring consistency between the digital sphere (IT) and the real sphere (the physical components of the organization) (Otia & Bracci, 2022).

### **B. Data**

Public institutions collect a significant amount of data concerning traffic, weather conditions, demographics, national security, human resources management as well as public policies (Otia & Bracci, 2022). The essential purpose of digitalization consists in facilitating the adequate exploitation of these resources so that they bring tangible benefit to citizens (Dobrolyubova, 2021). Nevertheless, various data quality issues are likely to compromise these initiatives: inaccuracy, inconsistency and incompleteness represent crucial factors affecting the success of digital projects (Albino, 2021). It is therefore essential to differentiate public data, which can be complex to access, from open, structured and rigorously maintained data, which are more easily searchable and exploitable (Jonathan & Rusu, 2019).

### **C. IT infrastructure**

According to Otia & Bracci (2022), in the modern era, the IT infrastructure constitutes the most important component of an organization. This substructure has a concrete impact on the implementation of digitalization, since it encompasses all hardware, software, networks and IT services in relation to the digital strategy. Likewise, for Finger & Montero (2022), this infrastructure offers basic logistics for almost all administrative tasks within public organizations, from archive management to the dissemination of legislative texts. Moreover, the diversity and quality of the services provided to citizens as well as their accessibility by the staff depend directly on the quality and availability of the IT infrastructure (Teichert, 2019; Abdella, 2012).

### **D. Interoperability**

Interoperability refers to standards, protocols, technologies and mechanisms that facilitate the exchange of data between various systems with minimal human intervention (Jonathan & Rusu, 2019). It promotes real-time communication between agencies and authorizes the provision of centralized integrated services at a single point (Otia & Bracci, 2022). Nevertheless, the lack of interoperability constitutes a significant obstacle to the transfer of information between public institutions, which goes against the objective of generating added value inherent in digitalization (Scupola & Mergel, 2022).

#### **3.1.2. Organizational factors**

The digitalization of public institutions cannot be reduced to the sole acquisition of technologies: it requires a profound adaptation of the organization in its culture, its structure and its managerial practices (West, 2005). Indeed, researchers agree that the success of digital transformation depends closely on the ability of organizations to adapt to the necessary transmutations, and multiple case studies have identified several determining organizational factors in this process (Akarkin & Yasinovskaya, 2019; Escobar et al., 2023 ; Loonam et al., 2018; Otia & Bracci, 2022; Osmundsen et al., 2020). These internal factors include in particular the organizational culture, change management, human resources skills and the involvement of the general management (Baker, 2014).

### **A. Organizational culture**

Organizational culture refers to the common beliefs, norms and behaviours, which define a systemic way of life in the organisation (Otia & Bracci, 2022). Kane et al., (2015) observed that organizations that foster a “digitalized vision” in the sense that Maxwell et al., (2019) define it instill values that view digital transformation as a source of opportunities and encourage open-mindedness, acceptance of technology, and innovation in their daily working practices. In contrast, digitalization initiatives may be unsuccessful when the organizational culture does not facilitate the transformation process (Osmundsen et al., 2020).

### **B. Change management**

In the context of change management, digital transformation aims to modify traditional processes and operations, which often involves organizational restructuring likely to affect people in the way they work (Jonathan and Rusu, 2019; Kuoppakangas et al., 2023). In a public sector where conversions are rare, this movement amounts to reinventing or even revolutionizing government functions (Ndou, 2004). To accompany these changes, it is essential to engage employees and stakeholders through information, consultation and involvement in order to reduce resistance and improve participation in reforms (Otia & Bracci, 2022). The arrival of new recruits with expertise in digitalization also contributes to integrating digital technologies by disrupting established routines as little as possible disrupt (Piccinini et al., 2015).

### **C. Human resources (HR) skills and the involvement of the general management**

The digital capabilities of HR and their willingness to question the operational strategies of their organizations are the most critical factors in determining the performance of these entities (Holotiuk & Beimborn, 2017). In conjunction with technical abilities, non-technical ones such as change management and collaboration (team spirit) are essential (Holotiuk & Beimborn, 2017; Osmundsen et al., 2020). On the other hand, on a higher scale, and always within the framework of HR, according to Osmundsen et al., (2020) and Otia & Bracci (2022), leaders must adopt a risk-taking approach, accept failure and influence the corporate culture in order to lead the transformation by example. Each of them plays an equally important role. In addition, senior managers must create management positions specific to information systems, promote the benefits of digital technology to individuals and obtain sufficient funding, in addition to maintaining their own technological skills (Akarkin & Yasinovskaya, 2019).

### **3.2. External factors**

In addition to internal technological and organizational factors, digital within public entities is subordinated to a set of external factors, often relating to the environment of the organization. Among these variables, the literature distinguishes culture, politics, human capital levels, the economic openness of the country, the availability of service providers as well as the vigorous segmentation (Holotiuk & Beimborn, 2017). Based on the TOE (Technology-Organization-Environment) framework, Dwi Putro et al., (2025) considers these elements as important mechanisms in the planning and execution of digital operations. Also, Kurnia et al., (2022) adds that the agility required to execute transformation projects with a lasting impact on employees and citizens is limited by segmentation, the economic and the social, not to mention the role of the state budget which is predetermined by other government agents.

#### **3.2.1. Political environment**

In a political context, elected persons and governments can steer the digitalization process of the public sector in a great manner (Di Giulio & Vecchi, 2023). E-government efforts are often electoral promises to improve accountability, citizen participation, integrity and quality of public services (Islam et al., 2023). Thus, the administrative managers are forced to constantly modify their actions to the political course, which often results in a gap between what is declared and what the stakeholders think has been achieved (Fooks et al., 2013).

#### **3.2.2. Cultural environment**

According to Milchram et al., (2018) the values and beliefs of a social group directly influence the acceptability and adoption of technology. Under this condition, the digital transformation processes within public administrations are modulated by the culture of citizens, in particular their language, their social norms, their level of education, the degree of acceptability in addition to trust in technology (Djatkiko et al., 2025). Kuoppakangas et al., (2023) show that several national cultural dimensions, in particular the distance of power, individualism in the face of collectivism, the avoidance of uncertainty and long or short-term orientation, structure the methods of deployment of online administration services.

#### **3.2.3. Economic environment**

From an economic point of view, digital transformation is presented as a lever for growth, offering citizens unprecedented opportunities, especially in emerging countries (Sarker et al.,

2018). However, the limited availability of financial resources constitutes a considerable obstacle to the digitalization of public administrations in many economies (Alvarenga et al., 2020). The lack of resources has repercussions on access to new technologies, the reliability of the IT infrastructure and the quality of training, in fact affecting the recruitment of qualified technical personnel (Alvarenga et al., 2020; Holotiuk and Beimborn, 2017).

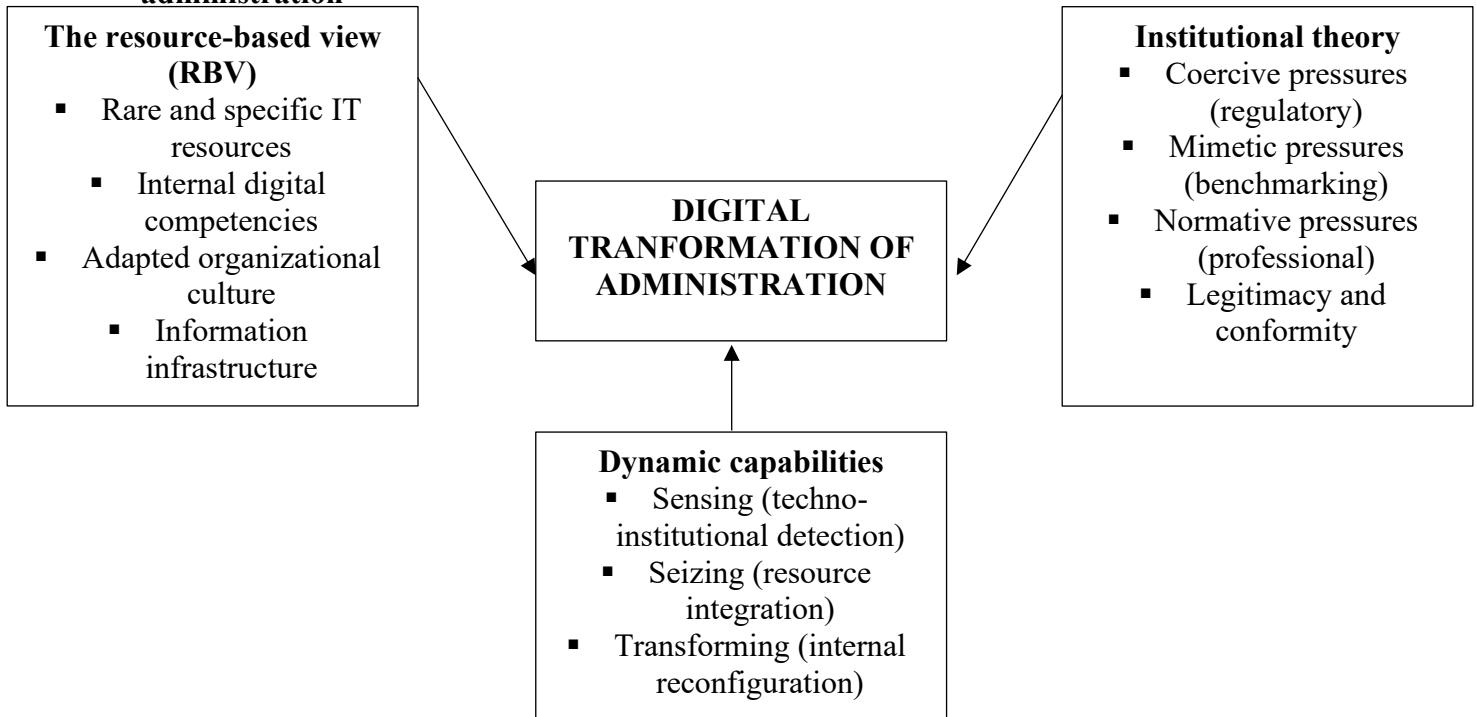
#### **3.2.4. Legal environment**

In general, the legal environment frames and constrains all these dynamics (political, economic and cultural). To explain the implication of this factor Holotiuk & Beimborn, (2017) believes that the legal environment determines the frameworks and limits in terms of security and data protection. Also, a regulated legal framework prevents administrations from innovating and embarking on the digitalization of their services (Manyilova & Norchuk, 2025). Moreover, digitalization introduces an unprecedented organizational transformation that raises legal, ethical and political questions that administrations must answer (Alvarenga et al., 2020).

### **3.3. Proposal of a synthetic analytical framework**

The intersection of the three theories mobilized, in particular the RBV, the institutional theory and the theory of dynamic capacities, makes it possible to identify an integrative framework for reading the digital transformation in public administration. Each theory illuminates a specific register of the digitization process without exhausting its complexity. Fig. 1 proposes a visual synthesis of this articulation.

**Figure n°1: Synthetic analytical framework of digital transformation in public administration**



**Source: Authors.**

As an explanation, the RBV takes into account internal organizational factors. She postulates that the digital transformation depends on the scarcity, the value and the uniqueness of the information and the technical and human resources of the administration. Similarly, institutional theory captures external factors by showing how coercive, mimetic and normative pressures constrain or guide the adoption of digital technologies within the public sector. Moreover, dynamic capacities act as a mediating mechanism. They translate the available resources and environmental pressures into concrete organizational adjustments, via the processes of absorption, integration and transformation of technological skills.

This framework does not suggest a linear succession but a simultaneous convergence. Indeed, the digitization of public administration results from the interaction between adequate internal resources, an institutionally structured environment and organizational adaptation capacities. Thus, the failure or success of digital transformation does not depend on a single determinant-technological, organizational or environmental, but on the consistency between these three variables. Consequently, this theoretical model offers a reading grid that can be transposed to different administrative contexts without claiming empirical completeness; it constitutes above all a structuring tool for the factors likely to guide public digitization strategies.

## Conclusion

The digital transformation of public administrations constitutes today one of the structuring vectors of the modernization of public action, raising the question of the compatibility between the fundamental principles of administrative management and the imperatives of agility, innovation and performance carried by information technologies. Faced with this tension, the literature on e-government remains largely descriptive or technical, leaving a theoretical void as to the explanatory mechanisms of digitization in an institutional context marked by specific constraints. This article sought to fill this gap by proposing a rigorous conceptualization of public digital transformation and by mobilizing theoretical frameworks from strategic management to grasp its determinants.

Conceptually, this research has made it possible to clarify the definition of digital transformation by showing that the latter in the context of public administrations goes beyond the simple automation of processes to initiate a strategic reconfiguration of organizational and cultural models. This part also highlighted that the public sector does not just borrow the referentials of the private sector: it translates them into imperatives of universal service, transparency and accountability which structure its digitization trajectories.

On the theoretical level, the RBV takes into account the endogenous factors-information resources, digital skills, organizational culture, which base the innovative capacity of the administration. Institutional theory, for its part, highlights the exogenous, coercive, mimetic and normative pressures that constrain and guide the technological choices of public organizations. Finally, dynamic capacities function as a mediation mechanism by translating available resources and environmental constraints into effective organizational adjustments.

The synthesis of these three theories within an integrative analytical framework constitutes the main contribution of this article. Our model proposes a structured reading grid that articulates the internal, external determinants and the adaptation processes of digital transformation in the context of public administration.

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