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Conceptual framework of e-Public Finance: theoretical contributions and methodological perspectives

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Abstract:
Digital transformation is a key lever for modernizing public finances and enhancing transparency and efficiency in public management. This paper provides a theoretical and conceptual analysis of e-Public Finance, aiming to clarify key concepts related to the digitalization of public financial management. It also identifies major theoretical approaches, including new public management, digital governance, information economy, and agency theory. Using a qualitative methodology based on a critical review of the literature, the study shows that e-Public Finance goes beyond mere computerization, driving a broader transformation of financial governance and information management.

Keywords: Digitalization of public finances; e-Public Finance; digital governance; conceptual framework; analytical methodology.
Jel Classification Codes: **:** H11, H83, D73.

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1. INTRODUCTION

Digitalization is today a central issue for the modernization of public finances, in a context marked by the rapid development of information technologies, the widespread use of digital governance and the growing demand for transparency, accountability and efficiency in the management of public resources.

States, faced with fiscal pressures and the demand for better performance of public action, seek to leverage ***e-Public Finance*** as a strategic lever to strengthen financial management, optimize budgetary processes and improve decision-making.

In this context, it is necessary to clarify the fundamental concepts related to the digitalization of public finances and to identify the main theoretical frameworks mobilized in the literature. Several approaches stand out: the New Public Management, which proposes a strengthening of efficiency and performance in public administration (Hood, 1991); ***digital governance***, which focuses on the integration of digital technologies into public governance mechanisms (Castells, 2000); the information economy, which analyses the production and circulation of information in public organizations (Stiglitz, 2000); and agency theory, which sheds light on the relationship between public decision-makers and citizens in terms of accountability and control (Jensen & Meckling, 1976).

Despite the growing interest in the digitalization of public finances, few studies propose a structured conceptual framework for analyzing the digital transformation processes of public financial management. To this end, the work will attempt to answer the following main question:

How can a conceptual framework of e-Public Finance explain the digital transformation of public financial management and support the assessment of performance, transparency and accountability in the Algerian context?

The objective pursued throughout this contribution is twofold: on the one hand, to propose a structured conceptual framework for analyzing the digital transformation processes of public financial management; on the other hand, to identify theoretical inputs and methodological perspectives for assessing performance, transparency and accountability in a digital financial environment (Mossberger, Tolbert, & McNeal, 2013). This theoretical analysis is of particular interest to Algeria, which, as part of its public finance reforms, is gradually committing itself to the digitization of budgetary and accounting management while seeking to strengthen the transparency and efficiency of the public service (Ministère des Finance, 2024).

In a context marked by Algeria's commitment to a process of digitalization of its public finances, this communication aims to propose not only a relevant analytical framework, but also critical benchmarks to differentiate a profound structural transformation from a simple technocratic modernization. Unlike approaches that focus exclusively on digital tools, we argue that e-Public Finance cannot be understood without an analysis of the power relationships, the underlying institutional logic and the ethical issues it raises.

The methodology adopted is based on an analytical and critical review of academic and institutional literature on e-Public Finance, combining international theoretical contributions and recommendations applicable to the Algerian context. This approach provides the basis for a robust conceptual framework that can guide both future research and the development of public policies for the digitization of public finances.

More specifically, the literature review followed a structured, four-step process. First, the search was conducted in academic databases (Web of Science, Scopus, Google Scholar) and in institutional repositories (OECD, World Bank, IMF, and the Algerian Ministry of Finance), using combinations of the keywords “e-Public Finance,” “digital governance,” “digitalization of public finance,” “new public management,” and “Algeria.” Second, the search covered publications from 1990 to 2024, in order to capture both the foundational theoretical contributions and the most recent empirical and institutional developments. Third, sources were selected according to three inclusion criteria: relevance to the conceptual or institutional dimensions of digital public financial management, theoretical or methodological contribution to one of the four frameworks retained (New Public Management, digital governance, information economy, agency theory), and, for documents related to Algeria, their official or institutional character (laws, decrees, ministerial reports). Fourth, the selected sources were classified into three categories—theoretical foundations, methodological approaches, and empirical or institutional applications—which structure the three main sections of this contribution. This systematic process ensures the traceability of the conceptual choices made and provides a transparent basis for the critical discussion developed in the following sections.

1. The conceptual foundations of e-Public Finance

This section aims to establish the conceptual foundations of e-Public Finance, building on the main theoretical frameworks used in the literature. The aim is to clarify key concepts, to distinguish between the concepts of computerization and digital transformation, and to present analytical approaches to understanding the digitalization of public finances. This first point thus constitutes the theoretical basis for analyzing, in the following sections, the methods and implications of the digital transformation of public finances, particularly in a context such as that of Algeria. The following subsections will address successively the definition and scope of e-Public Finance, the associated key concepts, the distinction between computerization and digital transformation, and finally a conceptual synthesis integrating the different theoretical perspectives.

1-1. Definition and scope of e-Public Finance

E-Public Finance, or digital public finance, refers to the systematic integration of digital technologies into public financial management, encompassing budget planning, expenditure execution, public accounting and the control of financial resources (Kettunen, 2018). This transformation goes beyond the simple computerization of administrative processes to constitute a systemic overhaul of financial governance modes, allowing better flow of information, real-time monitoring of budgetary operations and an improvement in the quality of decision-making (OECD, 2020). It is from this perspective that e-Public Finance can be understood as the strategic use of digital technologies to enhance transparency, efficiency and accountability in the management of public resources, an approach consistent with the OECD's digital government agenda (OECD, 2020), thus highlighting its intentional and political dimension, far beyond mere technical updating.

The scope of e-Public Finance includes several key dimensions**:** transparency of financial flows, accountability of public actors, efficiency in the allocation of resources and reduction of management costs (Heald & Hodges, 2015). In addition, it facilitates the integration of new technologies such as Big Data, artificial intelligence and blockchain, thus providing tools to anticipate budgetary needs and detect financial anomalies (Chen et al., 2020).

1.2. Key concepts related to the digitalization of public finances

Several theoretical concepts are mobilized to understand the digitalization of public finances:

- **New Public Management (NPM**): This paradigm focuses on efficiency, performance and accountability in the public sector. Digitization is seen as a tool for streamlining processes and optimizing the use of public resources (Hood, 1991) (Pollitt & Bouckaert, 2017).
- **Digital governance**: This concept refers to the integration of digital technologies into public control and control mechanisms. It involves the adoption of digital instruments for decision-making, communication with citizens and coordination between the various institutional actors (Castells, 2000) (Gil-Garcia & Pardo, 2005).

- **Information Economy**: This theoretical approach analyzes how the production, dissemination and use of information influence public management. As part of e-Public Finance, it helps to understand the mechanisms by which digital systems improve the transparency and reliability of financial data (Stiglitz, 2000) (Varian, 2010).
- **Agency theory**: It examines the relationships between decision-makers (principal) and managers (agents), highlighting the problems of asymmetry of information and control. Digitization offers tools to reduce these asymmetries and strengthen the accountability of public actors (Jensen & Meckling, 1976).

While these approaches appear to be complementary, they nevertheless reflect sometimes competing conceptions of the role of the State: either a performance-oriented manager (New Public Management), an interactive platform at the service of digital governance, a regulator of information flows in the context of the information economy, or an actor subject to control mechanisms according to agency theory. Their articulation thus makes it possible to avoid a reductive or strictly technicist reading of the digital transformation.

1.3. Distinction between computerization and digital transformation

It is crucial to distinguish between computerization and digital transformation in the context of public finances:

- Computerization is limited to converting manual processes into electronic processes**,** without altering organizational structures or decision-making processes (Dunleavy et al., 2006).
- Digital transformation, on the other hand, involves a comprehensive overhaul of financial systems, the integration of advanced analytical tools, and the adoption of new governance practices (Berman, 2012).

This distinction is particularly relevant for countries in digital transition, such as Algeria, where some reforms aim to modernize procedures without necessarily rethinking the entire institutional framework (Ministère des Finance, 2024). Thus, the simple transition from a paper budget support to an Excel-type spreadsheet is part of a computerized approach, while the implementation of an integrated public financial management system (SIGB), interconnecting public funds, authorizing officers and citizens, is entirely a digital transformation in the strict sense.

The development of e-Public Finance is therefore based on a combination of theoretical concepts and digital practices aimed at improving public management. Digitization is not only a technical tool, but also a vehicle for institutional and methodological transformation. It enables performance, transparency and accountability to be articulated in a systemic framework, thus providing a solid basis for the evaluation and planning of public financial policies (Mossberger, Tolbert, & McNeal, 2013) (Kettunen, 2018).

The concepts and distinctions presented in this section provide an essential theoretical framework for analyzing the digital transformation of public finances. However, moving

from theory to operational analysis requires the mobilization of methodological approaches and analytical frameworks to assess the performance, transparency and accountability of digital financial systems. The next section therefore focuses on the main methods used to study e-Public Finance, evaluation indicators, and conceptual models applied in academic and institutional literature.

2. Methodological approaches and analytical frameworks

The analysis of the digital transformation of public finances cannot be limited to a descriptive approach to the technological tools deployed. It requires the mobilization of rigorous analytical methods and structured conceptual frameworks, capable of understanding the organizational, informational and institutional dimensions of e-Public Finance. This section aims to present the main methodological approaches used in the literature, indicators to assess performance, transparency and accountability, as well as existing conceptual models. It also highlights the methodological limitations and theoretical challenges associated with the evaluation of digital public financial systems. The objective is to provide researchers and practitioners with a sound analytical framework for measuring performance, transparency and accountability in the digital context.

2-1. Methods for analyzing the digital transformation of public finances

Several methods are used in the literature to analyze the digitalization of public finances. They can be grouped into three main categories:

- **Qualitative methods**: these include literature review, case studies and interviews with public actors. These methods help to understand organizational processes, institutional issues and digital governance practices (Yin, 2014) (Creswell, 2018). For example, a study of experiences in implementing computerized fiscal systems in different countries identifies success factors and institutional barriers (Heeks, 2006).
- **Quantitative methods**: they are based on the collection and analysis of numerical data on budget execution, public expenditure and the performance of financial systems. The statistical and econometric approach measures the impact of digital tools on the effectiveness of financial management and the transparency of public information (Bryman, 2016) (OECD, 2020).
- **Mixed methods**: combining qualitative and quantitative approaches, they offer an integrated vision for analyzing the technical, institutional and social dimensions of digital transformation (Tashakkori & Teddlie, 2010). This approach is particularly appropriate for countries in digital transition, such as Algeria, where reforms are often partially implemented and where quantitative data may be incomplete (Ministère des Finance, 2024).

In a context where empirical data on e-Public Finance in Algeria remain limited, the critical review of the literature is an essential prerequisite for developing a relevant conceptual framework, prior to any field investigation

2-2. Performance indicators, transparency and accountability

To assess the digitalization of public finances, researchers use several types of indicators:

- **Performance indicators**: they measure the effectiveness, efficiency and impact of digital systems on public resource management. Examples include: expenditure turnaround time, budget compliance rate, transaction processing cost (Mossberger, Tolbert, & McNeal, 2013) (Heald & Hodges, 2015) (Kettunen, 2018).
- **Transparency indicators**: they assess access to financial information and the quality of published reports. Examples include online availability of budgets, frequency of public reporting, clarity and completeness of information (OECD, 2017) (Piotrowski & Van Ryzin, 2007).
- **Accountability indicators**: they examine the accountability of public actors and the monitoring capacity of citizens and institutions. Examples: existence of monitoring and audit mechanisms, frequency of internal controls, citizen participation in expenditure monitoring (Bovens, 2007) (Mulgan, 2000).

These indicators are frequently aggregated in digital scoreboards to ensure a comprehensive and continuous assessment of digitized public financial systems. However, although useful, they call for a cautious interpretation: putting a budget online does not guarantee its readability for the average citizen or, a fortiori, the effectiveness of real accountability, since formal transparency does not necessarily translate into effective accountability of public actors.

2-3. Existing conceptual models for e-Public Finance

Several conceptual models have been proposed to analyze the digital transformation of public finances:

- **The system model**: considers digital public finance as an integrated system where technology, governance and decision-making processes interact. It focuses on feedback loops between data, decision-making and budget control (Berman, 2012) (Chen et al., 2020).
- **The performance-based model**: integrates the concepts of performance, transparency and accountability, and provides a framework for evaluating **operational efficiency** and the results of digitalization (Mossberger, Tolbert, & McNeal, 2013) (Heald & Hodges, 2015).
- **The digital maturity model**: assesses the level of digitalization of public financial processes according to several dimensions: technological infrastructure, skills of agents, organizational integration and adoption of good governance practices (Kettunen, 2018) (OECD, 2020).

These models allow theoretical concepts to be articulated with practical assessment tools, and offer avenues to guide public policy and future research.

2-4. Methodological limitations and challenges in theoretical evaluation

Despite their usefulness, these approaches and models present some **limitations and challenges**:

- **Data availability and reliability**: financial systems in digital transition economies may have gaps or inconsistencies in databases, limiting quantitative analysis (Heeks, 2006) (Ministère des Finance, 2024).

- **Complexity of institutional correlations**: digital transformation is not limited to the introduction of new technologies; it also entails organizational changes that are difficult to model in a comprehensive way (Berman, 2012) (Dunleavy et al., 2006).
- **Assessing transparency and accountability**: these dimensions are often qualitative and contextual, making their measurement difficult to standardize (Bovens, 2007) (Piotrowski & Van Ryzin, 2007).
- **Adaptability of international models**: models developed for countries with high digital maturity may require adjustments to local realities, such as those of Algeria (Ministère des Finance, 2024).

These limitations underline the need for a flexible and combined approach, integrating qualitative and quantitative methods, to rigorously evaluate e-Public Finance.

2-5. Institutional approach and stakeholder analysis

The analysis of the digital transformation of public finances cannot be fully understood without explicit consideration of the institutional dimension and the role of the various actors involved. From this perspective, e-Public Finance appears not only as a set of technological tools, but as an institutional process deeply rooted in organizational structures, formal and informal rules, and existing power relationships within the public administration (North, 1990) (Peters, 2011).

Public financial institutions (ministries of finance, budget directorates, treasuries, courts of accounts and audit bodies) play a central role in the design, implementation and evaluation of digital financial systems. Successful digitalization thus depends on inter-institutional coordination, clarity of responsibilities and the ability of stakeholders to take ownership of new digital tools (Pollitt, 2003) (Gil-Garcia & Pardo, 2005). In Algeria, where administrative reforms have historically been conducted according to a highly centralized logic, the digital transformation of public finances implies a redefinition of roles and responsibilities between the different levels of government, as well as a gradual process of decentralization of financial management.

Furthermore, the institutional approach highlights the importance of interaction between public and non-public actors, including citizens, businesses and civil society organizations. Digitalization of public finances encourages the emergence of new mechanisms for participation and social control, enhancing accountability and transparency of public action (Bovens, 2007) (Piotrowski & Van Ryzin, 2007). However, these dynamics depend heavily on the regulatory framework, the level of digital maturity and the administrative culture.

Finally, this approach underlines that digital transformation can generate organizational resistance, linked to changes in professional practices, redistributions of power and increased demands for digital skills. Institutional analysis thus provides a relevant framework for understanding the differentiated trajectories of e-Public Finance and for identifying the conditions for the success of digital reforms.

2-6. Comparative dimension and international learning

The comparative dimension is central to the methodological analysis of e-Public Finance. Public finance digitalization reforms are often part of an international learning dynamic, where countries draw on experiences and good practices elsewhere (OECD, 2017). This comparative approach makes it possible to identify the factors of success, the pitfalls to avoid and the most effective models of digital financial governance.

International organizations play a key role in this process, including through the development of evaluation frameworks, standardized indicators and recommendations for digital public financial management (OECD, 2020) (World Bank, 2019). These instruments facilitate the dissemination of international standards, but also raise the question of their adaptability to national contexts**.**

In methodological terms, the international comparison has several limitations. Institutional, legal and socio-economic differences make it difficult to transpose e-Public Finance models directly from one country to another. A strictly normative or mimetic approach can lead to inadequate or ineffective reforms (Peters, 2011) (Pollitt & Bouckaert, 2017).

Thus, international learning must be seen as a selective and contextualized process, based on a critical analysis of foreign experiences and a gradual adaptation to national realities. In the case of countries in digital transition, this approach makes it possible to reconcile alignment with international standards with the consideration of specific institutional and organizational constraints, thus strengthening the coherence and sustainability of e-Public Finance reforms.

This section presented the main methodological approaches and analytical frameworks for studying the digital transformation of public finances. It highlighted the diversity of methodologies, the importance of performance indicators, transparency and accountability, as well as existing conceptual models and their limitations. These elements provide a solid basis for examining specific digital technologies and their practical applications in public finance, which will be discussed in the next section. The next section will therefore focus on analyzing modern technologies, such as artificial intelligence, Big Data, blockchain and open public finance, and their implications for public finance governance and performance.

3. CONCEPTUAL APPLICATIONS AND THEIR IMPLICATIONS

After exploring the conceptual foundations and methodological approaches of e-Public Finance, this section focuses on conceptual applications and their implications for public financial management. It examines how theoretical concepts and models translate into operational practices, focusing on the systemic logic of digital transformation, information management, decision-making, the impact on governance and financial performance, as well as the adaptability of these applications to the Algerian context. The objective is to provide an integrated analysis that links theory and practice**,** while highlighting the specific challenges of countries in digital transition.

3-1. Systemic logic of digital transformation

The digital transformation of public finances is not limited to the implementation of isolated technologies. It is based on a systemic logic, where processes, actors and technologies interact in an integrated manner (Berman, 2012) (Chen et al., 2020). In this context, digital financial systems are designed as **ecosystems**, including:

- the collection and automated processing of financial data;
- dissemination of information at different levels of decision-making;
- real-time monitoring of budgetary operations;
- continuous assessment of performance and compliance.

The system approach creates feedback loops between the information collected and the decisions taken, promoting the anticipation of financial needs and the rapid correction of anomalies. It also stresses the importance of effective institutional coordination involving ministries, control bodies and local actors (OECD, 2020). This logic can be understood as a continuous cycle: data → analysis → decision → execution → evaluation → adjustment; in which each link feeds the next one almost instantaneously.

3-2. Information management and decision-making in digital public finance

Digitalization is profoundly transforming information management in public finance. Digital systems enable:

a) **Comprehensive and reliable collection of financial data**, reducing errors and processing times (Heald & Hodges, 2015).
b) **A predictive analysis of expenditures and revenues**, using Big Data tools and artificial intelligence (Chen et al., 2020) (Kettunen, 2018).
c) **Rapid and transparent access to information for decision makers and citizens**, improving accountability and trust in public institutions (Mossberger, Tolbert, & McNeal, 2013).

The integration of these mechanisms facilitates evidence-based decision-making, identifies budgetary priorities and optimizes resource allocation. In this context, e-Public Finance acts as a strategic public steering tool, aligning financial objectives with socio-economic needs (Gil-Garcia & Pardo, 2005).

3-3. Impact on governance and financial performance

The adoption of digital financial systems has direct implications for governance and financial performance. Theoretically, three main effects are identified:

- **Improved transparency**: Online publication of budget data and access to interactive dashboards increase the visibility of public operations (OECD, 2017).
- **Increased accountability**: the traceability of transactions and the possibility of systematic oversight by oversight bodies reduce the risk of corruption and mismanagement (Bovens, 2007) (Piotrowski & Van Ryzin, 2007) .
- **Performance optimization**: Automation and process integration reduce administrative costs, accelerate budget execution and promote more efficient resource allocation (Hood, 1991) (Pollitt & Bouckaert, 2017).

These combined effects contribute to more effective financial governance by aligning administrative practices with international standards for digital public management.

3-4. Reflection on adaptability to the Algerian context

Adapting e-Public Finance applications to the Algerian context requires taking into account the country's institutional, regulatory and organizational specificities. There are several challenges and opportunities:

- **Infrastructure and skills**: the deployment of advanced technologies requires investments in computer systems and training of public officials (Ministère des Finance, 2024).
- **Regulatory framework**: Financial legislation and control rules need to evolve to integrate digital practices and ensure data security (OECD, 2020).
- **Organizational culture**: the transition to digital governance implies a change in management practices and an openness to citizen participation (Berman, 2012).

These three dimensions are illustrated by a series of concrete reforms already under way in Algeria. On the regulatory side, the Organic Law n° 18-15 of 2 September 2018 on finance laws (LOLF) introduced a results-oriented budgetary framework, a medium-term budgetary framework (cadre budgétaire à moyen terme, CBMT), and an expanded set of annexes to the finance law aimed at improving budgetary transparency. This framework was subsequently completed by Law n° 23-07 of 21 June 2023 on public accounting rules and financial management, which lays the legal groundwork for the modernization of public accounting and for the future integration of an accrual-based accounting system compatible with digital management tools. On the administrative side, the Directorate General of Taxes has progressively deployed the “Jibaya’tic” portal, an electronic platform for tax e-filing and e-payment initially aimed at large enterprises (Direction des Grandes Entreprises) before being extended to other categories of taxpayers, alongside complementary services such as online certificates of tax status. In the same vein, successive finance laws, including those for 2024, 2025 and 2026, have reaffirmed the objective of digitalizing budgetary and fiscal procedures, while a draft law on electronic trust services and digital identification is being examined to provide a national framework for electronic certification and signature, a prerequisite for fully dematerialized financial transactions. These examples show that, in Algeria, e-Public Finance is not a purely theoretical construct but an ongoing institutional process, combining legislative reform of the budgetary and accounting framework with the gradual deployment of digital platforms for tax administration; however, as previously discussed, their effects on transparency and accountability still depend on inter-institutional coordination, the digital literacy of agents and citizens, and the consistent application of the new regulatory texts.

Despite these challenges, e-Public Finance offers important opportunities to improve the transparency, performance and accountability of public finances in Algeria. A gradual and planned adoption of digital technologies, accompanied by a robust methodological framework, can enhance the effectiveness of public management and promote alignment with international standards (Kettunen, 2018) (Mossberger, Tolbert, & McNeal, 2013).

3-5. Ethical issues and sovereignty of public financial data

The digital transformation of public finances raises major ethical challenges, in particular in terms of financial data protection, confidentiality and digital sovereignty. E-Public Finance systems are based on the collection, processing and storage of large volumes of sensitive data, covering both state finances and information on citizens and businesses (OECD, 2020).

Theoretically, these challenges question the ability of public administrations to ensure the security, integrity and confidentiality of financial data in an increasingly interconnected digital environment. The risks associated with cyber-attacks, leakage of information and misuse of data are major challenges for digital financial governance (Kettunen, 2018) (World Bank, 2019).

The issue of data sovereignty is also central. The use of outsourced technological infrastructures or solutions developed by international private actors can create forms of technological dependency, which may affect the decision-making autonomy of states in public financial management (Bannister & Connolly, 2014).

These issues call for in-depth reflection on technological choices, legal frameworks and regulatory mechanisms adapted to digital public finances.

Who holds the keys to public financial data? Are the servers hosted locally? These issues determine not only security, but also the strategic autonomy of the State.

3-6. Theoretical risks and limitations of the digitalization of public finances

While the literature highlights the potential benefits of e-Public Finance, it also highlights the existence of theoretical and organizational risks related to the digitalization of public finances. One of the main risks is a techno-centric approach, where technology is seen as an end in itself, at the expense of the human, institutional and political dimensions of public management (Dunleavy et al., 2006).

On the other hand, the increasing automation of financial processes may lead to a decline in the responsibility of public actors, as decision-making is excessively transferred to digital systems and algorithms. (Bovens & Zouridis, 2002). This raises fundamental questions of administrative responsibility and democratic control.

The literature also discusses the risk of digital inequalities, which may exclude certain actors or territories from access to financial information and participation mechanisms, thus compromising the objectives of transparency and accountability (Mossberger, Tolbert, & McNeal, 2013). These limitations underline the need for a critical and balanced approach to the digital transformation of public finances.

3-7. Sustainability of e-Public Finance reforms

The sustainability of e-Public Finance reforms is a central issue in the analysis of digital transformations in public finances. Beyond the implementation phase, the sustainability of digital financial systems depends on their ability to adapt to technological, institutional and economic developments.

At the theoretical level, sustainability refers to several dimensions: the availability of the financial resources needed to maintain systems, the continuous development of digital

skills of public officials, and the adaptation of regulatory frameworks to technological innovations (OECD, 2020). The absence of these conditions can lead to a rapid obsolescence of the systems and a loss of effectiveness of the reforms undertaken.

In this context, e-Public Finance must be designed as an evolutionary process, based on a long-term strategic vision and adaptive governance. This approach strengthens the resilience of public finances to economic and technological uncertainties, while consolidating the objectives of performance, transparency and accountability.

This section highlighted the conceptual applications and their implications for digital public finance. Systemic logic, information management, decision-making, and the impact on governance and financial performance were analyzed from both a theoretical and a practical perspective. The reflection on adaptability to the Algerian context underlines the importance of a gradual and contextually adapted approach.

In order to ensure the sustainability of the reforms undertaken, it seems essential to link technological modernization to a system of continuing training, while embedding a culture of evaluation over time.

4. CONCLUSION

The digital transformation of public finances is now a major strategic challenge for States, faced with increased demands for performance, transparency and accountability in the management of public resources. Through this contribution, the objective was to provide theoretical and conceptual insights into e-Public Finance, highlighting its conceptual foundations, analytical frameworks and methodological perspectives, in order to better understand the mechanisms of the digital transformation of public financial management.

The analysis shows that e-Public Finance cannot be reduced to a mere computerization of budgetary and accounting procedures. It is part of a systemic logic of transformation, involving a redesign of the modes of financial governance, information management and public decision-making. The conceptual foundations mobilized (New Public Management, digital governance, information economy and agency theory) make it possible to grasp the multidimensional scope of this transformation, stressing the central role of information, digital technologies and relations between public actors in improving financial performance and transparency.

From a methodological point of view, the contribution highlights the need to adopt integrated analytical approaches, combining qualitative, quantitative and mixed methods, in order to understand the complexity of the processes of digitalization of public finances. The identification of performance, transparency and accountability indicators, as well as the examination of existing conceptual models, underline the importance of a multidimensional assessment, sensitive to institutional and organizational contexts. The methodological limitations noted recall that the evaluation of e-Public Finance remains a delicate exercise, requiring constant adaptation of the analytical tools to national realities.

A review of the conceptual applications and their implications showed that the digital transformation of public finances has a profound influence on financial governance,

information management and decision-making. While the potential benefits in terms of efficiency, transparency and accountability are significant, this transformation also raises major challenges, notably in terms of data sovereignty, technocentric risks, digital inequalities and sustainability of reforms. These elements confirm that e-Public Finance should be seen as an evolutionary and institutional process, rather than as a standardized technological solution.

In the Algerian context, this reflection is of particular importance. Reforms in the digitalization of public finances offer real opportunities to strengthen the performance and transparency of financial management. However, their success will depend on the capacity of institutions to adopt a progressive, contextualized and coordinated approach, integrating technological, human, organizational and regulatory dimensions. The conceptual framework proposed in this contribution can thus be a tool for analysis and guidance, both for researchers and for public decision-makers, in accompanying digital financial reforms.

This conceptual framework does not claim to be a universal recipe, but is intended as a critical tool to accompany the reforms under way in Algeria, avoiding both naive techno-enthusiasm and institutional conservatism. The real added value of e-Public Finance lies not in the sophistication of algorithms, but in its ability to promote fairer, more transparent and more service-oriented public finance.

In short, this contribution responds to the problem posed by showing that e-Public Finance, understood through a structured conceptual framework, helps to shed light on the mechanisms of digital transformation of public finances and to analyze their effects on performance, transparency and accountability. It also opens up prospects for future empirical research, including comparative research, aimed at deepening the evaluation of digital public financial management systems and analyzing their real impact on governance and economic development.

5. Bibliography List:

1) Bannister, F., & Connolly, R. (2014). ICT, public values and transformative government: A framework and programme for research. Retrieved from Government Information Quarterly, 31(1), 119–128. : https://doi.org/10.1016/j.giq.2013.06.002
2) Berman, S. J. (2012). Digital transformation: Opportunities to create new business models. Retrieved from Strategy & Leadership: https://doi.org/10.1108/10878571211209314
3) Bovens, M. (2007). Analysing and assessing accountability: A conceptual framework. Retrieved from European Law Journal, 13(4), 447–468. : https://doi.org/10.1111/j.1468-0386.2007.00378.x
4) Bovens, M., & Zouridis, S. (2002). From street-level to system-level bureaucracies: How information and communication technology is transforming administrative discretion and constitutional control. Retrieved from Public Administration Review, 62(2), 174–184. https://doi.org/10.1111/0033-3352.00168
5) Bryman, A. (2016). Social research methods (5th ed.). Oxford University Press.
6) Castells, M. (2000). The rise of the network society (2nd ed.). Blackwell Publishers.

7) Chen, Y., Chen, H., Gorkhali, A., Lu, Y., Ma, Y., & Li, L. (2020). Big data analytics and public sector governance: Issues, challenges and opportunities. Government Information Quarterly, 37(1), 101420.
8) Creswell, J. W. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage Publications.
9) Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). Digital-era governance: IT corporations, the state, and e-government. Oxford University Press.
10) Gil-Garcia, J. R., & Pardo, T. A. (2005). E-government success factors: Mapping practical tools to theoretical foundations. Government Information Quarterly, 22(2).
11) Heald, D., & Hodges, R. (2015). Will "open government" improve public sector financial management? Public Money & Management, 35(4), 237–244.
12) Heeks, R. (2006). Implementing and managing e-government: An international text. Sage Publications.
13) Hood, C. (1991). A public management for all seasons? Retrieved from Public Administration, 69(1), 3–19. : https://doi.org/10.1111/j.1467-9299.1991.tb00779.x
14) Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Retrieved from Journal of Financial Economics 3(4), 305–360.: https://doi.org/10.1016/0304-405X(76)90026-X
15) Kettunen, P. (2018). Digitalization and public sector productivity. Public Policy and Administration, 33(1), 12–28.
16) Ministère des Finance. (2024). Rapport sur la modernisation et la digitalisation des finances publiques en Algérie. Ministère des Finances.
17) Mossberger, K., Tolbert, C. J., & McNeal, R. S. (2013). Digital citizenship: The internet, society, and participation. MIT Press.
18) Mulgan, R. (2000). Accountability: An ever-expanding concept? Retrieved from Public Administration, 78(3), 555–573. : https://doi.org/10.1111/1467-9299.00218
19) North, D. C. (1990). Institutions, institutional change and economic performance. Cambridge University Press.
20) OECD. (2017). Budget transparency toolkit. OECD Publishing.
21) OECD. (2020). Digital government index 2019: Results and key findings. OECD Publishing.
22) Peters, B. G. (2011). Institutional theory in political science: The new institutionalism (2nd ed.). Continuum.
23) Piotrowski, S., & Van Ryzin, G. (2007). Citizen attitudes toward transparency in local government. Retrieved from The American Review of Public Administration, 37(3), 306–323. : https://doi.org/10.1177/0275074006296777
24) Pollitt, C., & Bouckaert, G. (2017). Public management reform: A comparative analysis – into the age of austerity (4th ed.). Oxford University Press.
25) Pollitt, C. (2003). The essential public manager. Open University Press.
26) Stiglitz, J. E. (2000). Economics of the public sector. W. W. Norton & Company.
27) Tashakkori, A., & Teddlie, C. (2010). Mixed methodology: Combining qualitative and quantitative approaches. Sage Publications.
28) Varian, H. R. (2010). Intermediate microeconomics: A modern approach (8th ed.). W. W. Norton & Company.
29) World Bank. (2019). GovTech: Putting people first. World Bank Publications.
30) Yin, R. K. (2014). Case study research: Design and methods (5th ed.). Sage Publications.