

Study of agile management practices applied to NSIF-Algeria

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Abstract:

This study examines the management practices of NSIF (National Social Insurance Fund)amid digital transformation and budgetary constraints. Based on qualitative semi-structured interviews with senior managers, we analyzed their application of agile principles in daily agency operations. Results show that NSSF has developed a contextualized organizational agility, characterized by adaptability, collaboration, incremental innovation, and a focus on improving public services. Resource pooling emerges as a central lever for cost optimization, service accessibility, and institutionalized collective intelligence. These findings provide insights into agile management in public sector organizations under regulatory and resource constraints.

Keywords: Agile management, pooling, social security, NSIF

JEL classification code: M12, M14, H11, H83.

1. INTRODUCTION

Over the last two decades, public organizations have been confronted with profound transformations related to the digitalization of services, the rapid evolution of information and communication technologies, as well as increasingly strict budgetary constraints. In this context marked by uncertainty, complexity, and increased pressure from users, traditional management models, based on bureaucratic rigidity and the centralization

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of decisions, are progressively showing their limits. These transformations have led to the emergence of new managerial approaches, among which agile management stands out as a relevant organizational response to unstable and demanding environments.

Initially developed in the field of software development, agile management has progressively spread to all organizational functions, including within the public sector. It is based on key principles such as flexibility, decentralization of decisions, cross-functional collaboration, continuous improvement, and orientation toward user satisfaction. These principles, however, come into tension with the specificities of public organizations, particularly social security institutions, which evolve within a strict and highly institutionalized regulatory framework.

Context and Research Problem

In Algeria, the social security system constitutes a strategic sector covering a large part of the population and relying on organizational structures extended over the entire national territory. The National Fund for Social Insurance of Salaried Workers (NSIF), as the main institution of the system, manages a dense network of structures, large volumes of insured persons, and complex social missions. Faced with the growth of users' expectations, the necessity of bringing public service closer to citizens, particularly in remote regions, and the obligation to rationalize public expenditures, the NSIF has progressively adopted innovative managerial practices inspired by the principles of agile management.

Within this framework, the pooling of resources (human, material, and organizational) appears as a central lever of managerial agility, making it possible to optimize the allocation of resources, to strengthen inter-organizational cooperation, and to improve the quality of services delivered to social insured persons. However, empirical works dealing with the concrete application of agile management in social security institutions, particularly in developing countries and in the Algerian context, still remain limited.

It is within this perspective that the present research is situated, the objective of which is to analyze agile management practices within the

NSIF, by emphasizing the dynamic of resource pooling as an operational mechanism of organizational agility. The central problem of the study is the following:

How does the NSIF apply the principles of agile management in its management, and through which concrete mechanisms is this dynamic implemented?

From this main question derive the following sub-questions:

-What are the characteristics of agile management practiced by the public organization NSIF?

-How is the agile dynamic concretely implemented in the management of the public organization NSIF?

To answer these questions, we formulated the following working hypotheses:

H1: The agile management of NSIF is characterized by its capacity for rapid adaptation to changes, to promote collaboration and team empowerment, as well as to encourage innovation.

H2: The agile dynamic is implemented at NSIF through the decentralization of decisions, the pooling of resources, and the adoption of collaborative practices oriented toward user satisfaction.

To respond to this problem, a qualitative methodology was mobilized, based on semi-structured interviews conducted with senior executives of the General Directorate of NSIF. This approach makes it possible to grasp perceptions, actual practices, and managerial action logics within a strongly regulated institutional context.

The scientific interest of this research lies in its contribution to the literature on agile management in the public sector, by providing empirical insight into a social security institution. From a managerial standpoint, the study makes it possible to draw operational lessons on the conditions for the appropriation of agility in Algerian public organizations.

Literature Review

Theoretical Foundations of Agile Management

The intellectual roots of agility date back to the 1980s with the successes of Japanese industry and the Toyota Production System, which already

foreshadowed many principles later formalized under the label “agile” (Womack, 1990). In the field of software development, the 1990s witnessed a growing dissatisfaction with traditional methodologies, notably the waterfall model, which proved inadequate in the face of the fundamentally creative and evolving nature of software development. Confronted with failure rates exceeding 60% according to the Standish Group, various alternative methodologies emerged, including Scrum (Schwaber, 1995), Extreme Programming (Beck, 2001), and Crystal Methods (Cockburn, 2001).

The Agile Manifesto of 2001, the result of a meeting of seventeen influential practitioners in Snowbird, Utah, constitutes a remarkably concise yet conceptually dense document (Beck, 2001). In only 68 words, it articulates four fundamental values operating a radical axiological inversion: the primacy of individuals and their interactions over processes and tools, the superiority of working solutions over exhaustive documentation, the importance of collaboration with the customer rather than contractual negotiation, and the necessity of adapting to change rather than rigidly following a pre-established plan. The historical importance of this manifesto largely exceeds its intrinsic content, symbolically marking the constitution of an intellectual movement structured around agility (Prange, 2018).

Over the following two decades, the concept of agility experienced a remarkable evolution, progressively transcending its technological origins to apply to all organizational functions (Rigby, 2020). This horizontal diffusion was accompanied by a rise in conceptual generality, with agility ceasing to be perceived as a simple set of methods to be conceptualized as a fundamental organizational capability, or even as a new managerial paradigm (Denning, 2018). (Warner, 2019) established a fruitful bridge between organizational agility and dynamic capabilities theory, conceptualizing agility as a meta-capability enabling the continuous development, reconfiguration, and redeployment of ordinary organizational capabilities.

2.2. Agile Management in the Public Sector: Challenges and Opportunities

Agile transformation in the public sector is constrained by rigid hierarchies, regulatory frameworks, and entrenched bureaucratic cultures (Azonuche, 2024). Unlike the private sector, public institutions face legal and political limitations that restrict flexibility. The integration of Lean-Agile principles with enterprise architecture is identified as a key success factor, ensuring alignment between governance, digital infrastructure, stakeholder needs, and regulatory compliance (Azonuche, 2024).

Empirical evidence from Swiss municipal administrations shows that agility is achievable under specific conditions, including strong leadership commitment, holistic long-term vision, experimentation, cross-functional autonomous teams, stakeholder involvement, continuous feedback, and system optimization (Stucki-Sabeti, 2022).

Nevertheless, Weberian bureaucratic structures and cultural traits such as high power distance and uncertainty avoidance remain significant barriers to agile adoption (Hofstede, 2001).

2.3. Collective Intelligence and Agile Innovation

Collective intelligence constitutes a key driver of agile innovation. (Gréselle-Zaïbet, 2019) defines it as a set of collective capacities for reflection, understanding, decision-making, and action emerging from member interactions to address complex situations. This perspective highlights its dynamic and evolving nature, grounded in collaborative knowledge production.

(Gréselle-Zaïbet, 2019) identifies four main processes underpinning collective intelligence: collective reflection, collective understanding, collective decision-making, and collective action, the latter contributing to organizational memory. The study further emphasizes that collective intelligence is an emergent phenomenon requiring specific conditions, including servant leadership, autonomous self-organized teams, structured continuous improvement through retrospectives, and intensive communication supported by direct interactions and shared workspaces.

2.4. Agile Change Management and Organizational Maturity

(Lemieux, 2015) highlight strong parallels between change management evolution and agile principles. Their study of ten Quebec organizations shows that the internalization of change management aligns with agile practices such as iterative processes, stakeholder collaboration, and continuous feedback, particularly within public organizations.

Their findings indicate that higher organizational maturity facilitates the demonstration of change management's added value and strengthens actor empowerment, thereby enhancing the organization's capacity to absorb change (Lemieux, 2015). Critical success factors include the adoption of a formal framework, reduced reliance on external consultants, institutionalization of practices, and the development of empowered cross-functional teams. However, this internalization process remains gradual and complex, often extending over nearly a decade (Lemieux N. , 2015).

2.5. Adoption and Evolution of Agile Practices: Empirical Perspectives

(Julian, 2019), through a Grounded Theory study conducted with twenty-two practitioners in twenty New Zealand organizations, identify two main approaches to agile adoption: the “big bang” approach, which involves implementing a complete framework (e.g., Scrum) from the outset, and the “gradual” approach, characterized by the progressive integration of agile practices. While the former establishes structure and discipline, the latter allows incremental adaptation according to organizational needs.

Regardless of the initial strategy, all teams evolve toward continuous improvement, iteratively adjusting practices to their specific context (Julian, 2019). Mature teams prioritize alignment between work nature and processes, highlighting the centrality of an agile mindset over the mechanical application of methods.

2.6. Enterprise Architecture and Alignment with Agile Transformation

(Azonuche, 2024) underline the strategic importance of aligning enterprise architecture (EA) with agile methodologies in public sector IT projects. Their review shows that integrating EA frameworks (e.g., TOGAF, Zachman, FEAF) with Lean-Agile practices helps address legacy system complexity, regulatory constraints, and cultural resistance to change.

The proposed integration relies on three pillars: iterative agile workflows, value stream mapping guided by EA to reduce bureaucratic inefficiencies, and continuous feedback involving stakeholders and citizens (Azonuche, 2024). Additionally, the concept of “architecture runways” ensures anticipatory architectural planning, enabling agile teams to deliver value while maintaining system stability, compliance, and coherence—particularly in critical public domains such as taxation, healthcare, and identity management.

3. The Context of Social Security Institutions (Case of NSIF)

Agile management has emerged as a strategic approach within social security institutions seeking to enhance efficiency and service quality. The International Social Security Association (ISSA, 2017) recognized this orientation by awarding the National Fund for Social Insurance of Salaried Workers (NSIF) a Certificate of Merit with Special Mention during the ISSA Award for Good Practices – Africa 2017. This distinction reflects NSIF’s commitment to implementing agile-inspired practices both internally and in coordination with other Algerian social security funds.

3.1. Agile Management Practices at NSIF: Context and Issues

In Algeria, agile management practices align with broader governmental reforms aimed at increasing process flexibility and modernizing public services (ISSA, 2017). These reforms respond to rising user expectations while addressing the imperative of efficiency and financial sustainability within the social security system. This dual objective of modernization and financial rationalization reflects the principles of adaptability and responsiveness emphasized in the Agile Manifesto (Beck, 2001).

Structurally, the Algerian social security system comprises five main institutions covering over 86% of the population across a vast national territory. NSIF, the largest institution, operates more than 1,000 structures across wilayas, managing a substantial number of employers and insured persons. Such organizational complexity reinforces the strategic relevance of agile management, consistent with (Holbeche, 2015) conception of organizational agility as the capacity to rapidly reconfigure resources and structures.

3.2. Motivations and Implementation of Agile Practices at NSIF

The adoption of agile management practices at NSIF was driven by VUCA-related challenges—volatility, uncertainty, complexity, and ambiguity—including limited service accessibility for users in remote areas, dissatisfaction from traveling between institutions, and the need for cost rationalization (Nathan, 2014); (Womack J. J., 2003). Strategically, NSIF seeks to enhance service delivery, requiring operational agility to adapt, coordinate, and optimize responsiveness across social security institutions (Doz, 2010); (Sherehiy, 2007); (ISSA, 2017).

The operationalization of agility took the form of proximity service counters, enabling resource sharing among institutions under ministerial supervision. This approach exemplifies Agile principles such as customer collaboration, modularity, and rapid execution (Beck, 2001); (Denning, 2018); (Belbachir, 2016). These counters improve territorial coverage, simplify administrative procedures, consolidate services in a single location, and reduce travel costs for users, reflecting the principles of continuous value delivery and customer orientation (Schwaber, 1995).

Organizational objectives include enhancing efficiency and effectiveness through the flexible allocation of human and material resources, fostering cross-institutional collaboration, accelerating task completion, and rationalizing operating expenditures, consistent with Lean Management principles (Womack J. J., 2003). Agile practices also strengthen workforce versatility, promote team building, reinforce cultural cohesion, and support environmental sustainability by reducing travel and energy consumption (Goldman, 1995).

Since 2015, NSIF has progressively implemented these practices, establishing a total of 52 proximity counters by 2017, demonstrating incremental delivery, adaptation to change, and strategic agility (Beck, 2001); (Rigby, 2020); (Doz, 2010). The counters have significantly improved accessibility, user satisfaction, and the efficiency of activities such as contribution collection and career data management.

Agile practices complement ongoing digital transformation initiatives, including electronic services, while maintaining the relevance of physical

interactions where required. The single window system illustrates operational versatility and self-organized teams, allowing agents to handle multiple service types efficiently and improving user satisfaction (ISSA, 2017).

Key success factors include committed human capital, robust ICT infrastructure, software interoperability, and cross-institutional collaboration, which together enable responsiveness, continuous improvement, and quality service delivery (Dikert, 2016); (Holbeche, 2015); .

The NSIF experience confirms that agile management fosters strategic and operational agility, facilitates collaboration, decentralizes decision-making, pools resources, and promotes user-oriented innovation. These insights underpin the following research hypotheses:

H1: Agile management at NSIF enables rapid adaptation to change, promotes collaboration and team empowerment, and encourages innovation.

H2: Agile dynamics are implemented through decision decentralization, resource pooling, and collaborative practices focused on user satisfaction.

4. Methodology

This research employs an exploratory qualitative approach to examine agile management practices within NSIF. Data were collected through semi-structured interviews with six deputy directors representing key operational directorates: Studies, Statistics and Organization (DESO), Resources and General Means (DRMG), Finance (DOF), Health and Social Action (DASS), and Human Resources (DRH).

4.1. Interview Guide Structure

The interviews focused on three main axes: (1) managerial agility in general, to assess knowledge and practice of agile management; (2) resource pooling practices, tailored to each directorate's responsibilities; and (3) the application of these practices in the ten newly established agencies in southern Algeria, allowing analysis of geographical-specific dynamics.

4.2. Participant Selection and Procedure

Participants were purposively selected as key actors in their respective directorates to provide in-depth qualitative insights. The choice of six interviews was guided by data saturation, strategic relevance of participants, and profile diversity regarding resource types. Interviews lasted 20–60 minutes, conducted face-to-face, with detailed note-taking to ensure reliable and comprehensive data capture.

4.3. Data Analysis

A thematic qualitative approach was used for data analysis. Interview transcripts were structured into reports respecting respondents' statements. Coding was based on the interview axes to identify common themes, divergences, and specificities in resource pooling practices. Special attention was given to the implementation of agile management in southern Algeria, a region with unique geographical and demographic challenges.

5. Practical Study

5.1 State of Play on the Practice of Agile Management at NSIF

In this study, we first aim to explore the concept of agility, which represents a response to an environment characterized by instability, uncertainty, and complexity. In such a context, agility is no longer merely an option but a strategic requirement for organizations to survive and respond effectively to environmental changes.

The objective of this axis, consistently addressed across all interviews, is twofold: to clarify how the concept of agility is constructed within the NSIF, and to assess the degree to which agile practices are implemented in the organization.

5.2. Presentation of Interview Results

The first set of interview questions was designed to investigate the implementation of agile management, constituting the primary axis of our study. These questions were posed to six deputy directors from the General Directorate of NSIF, representing key operational directorates. The aim was to evaluate the practical application of agile management principles and to understand how these practices are perceived and enacted within the organization.

5.3. Agile Management

Several responses confirmed that NSIF management is agile. *The DOF deputy director defines it as follows: "It is an approach that allows an organization to act and react to its internal or external environment following changes, IT and technological evolutions, taking into account timing in decision-making. The establishment of this approach requires: well-trained staff; confident and vigilant."*

Despite this agile orientation, NSIF is still governed by regulatory texts, which can constrain management practices. Managers often adopt situational approaches to overcome these obstacles, such as reinforcing controls to improve revenue collection from seasonal activities.

The deputy director of DESO explains: "The management of NSIF is characterized by: a work team with decision-making power; autonomy and self-organization; pursuit of technical excellence; innovation, minimal necessary documentation; automation of changes, management driven by issues and risks; continuous improvement, because they are all in the strategic axis of NSIF."

NSIF has a dedicated sub-directorate for improving public service quality. *The DOF deputy director adds: "NSIF develops services to meet the needs of non-seeing individuals, NSIF collects suggestions from its collaborators, clients, and staff, then conducts a feasibility study, and finally a decision to engage is made."*

Regarding values and operational practices: *"The management of NSIF relies much more on teamwork, communication, and finding operational solutions."* Collaboration with users occurs at the agency level, according to the DRMG deputy director: *"Collaboration with users takes place at the agency level (counters)."*

NSIF management encourages flexibility to adapt to regulatory requirements and user needs. *The DOF deputy director states: "In 2015, the Director General of NSIF issued a note (instruction) to establish participatory management in the agencies, which means listening to everyone, fostering collaboration between teams. When the collaborator is involved, he gives his all, because he knows the job well since he is*

operational, he knows all the needs of the insured, so he knows how to improve them by making timely decisions."

Change management primarily focuses on the human aspect, reflected in initiatives such as renaming the "Personnel and Training Directorate" to the "Human Resources Directorate" in 2019. NSIF invests in human capital through training, leadership development, and strategic workforce management (GPEC). As stated by managers: *"In the event of a mandatory organizational or structural change, it is DESO that studies the feasibility of any change, then proposes it, and the change can then be implemented."*

5.4. Resource Pooling as an Agile Practice

Resource pooling occupies a central place in NSIF's agile management.

Respondents stated: *"It holds an important and prioritized place for NSIF in the management of its resources" and that pooling cannot be separated from agile management, because "it helps to get closer to the NSIF user."*

They added: *"We cannot talk about management if there is no pooling of resources. It is essential to ensure an agile management approach."*

However, exceptions exist depending on the situation: *"In certain cases yes, and in others no... it depends on the situations."*

NSIF actively supports resource pooling with other social security institutions while respecting sector norms. As noted: *"It responds to the requirements of public authorities; the funds are obliged to meet the needs of the insured, so the funds do not have choices. For example: Recently, the President of the Republic oversees digitization, modernization, and achieving zero paper; all institutions have no other choice, and they will implement it, each instituting practices to meet the requirements of public authorities to be up to the level expected by the insured."*

Although these institutions have some autonomy, collective management is sensitive and strictly regulated, as they form a strategic sector of the country.

6. Analysis and Interpretation of Results

Our analysis shows that NSIF management adopts an agile approach to respond to changes, technological developments, and evolving user needs. This approach emphasizes responsiveness, timely decision-making, and relies on well-trained, confident, and vigilant personnel. Agile management at NSIF is characterized by delegation of decision-making to work teams, autonomy, self-organization, technical excellence, innovation, minimal documentation, automation of changes, risk-driven management, and continuous service improvement. Teamwork, communication, and operational problem-solving are central to NSIF's managerial values.

Collaboration occurs across multidisciplinary teams and daily meetings, promoting a culture of self-organization while autonomy is somewhat constrained by regulatory and hierarchical directives. Change management focuses on human capital, including training and strategic workforce planning (GPEC), while NSIF adapts to structural or organizational changes after feasibility assessments. The organization encourages innovation, creativity, and rapid adaptation to improve service quality, supported by ICT developments since the early 2000s, leading to innovations such as the Chiffa card, El Hanaa space, and the Chiffa card 2.

NSIF also implements resource pooling as part of agile management, enhancing collaboration with other social security institutions to meet user needs, optimize expertise, and manage operational and strategic risks. While regulatory frameworks sometimes limit managerial flexibility, NSIF continues to foster a culture of continuous improvement and service excellence.

6.1. Special Distinction for NSIF Innovation 2023

NSIF was awarded the Special Distinction for Innovation by the International Social Security Association (ISSA) for its Electronic Medical Card project, recognizing its digitization of medical records and improvement of service quality. The project reflects NSIF's agile management by enabling faster processing of medical benefits, reducing beneficiaries' travel, and facilitating data-driven decision-making. Additional projects, including "Promoting Communication with People

with Special Needs,” “El Hanaa Space,” and the Mobile Counter, further demonstrate innovation in extending services to underserved populations. These initiatives align with the principles highlighted by (Peters, 1982) for successful organizations: action orientation, innovation, staff motivation, collective action guided by core values, simple structures, and flexible yet clear guidelines. NSIF’s agile management requires strong commitment from leadership, mobilization of personnel, creativity, collaboration, and strategic alignment with its mission to continuously improve social security services.

7. Discussion: Comparative Analysis and Confirmation of Hypotheses

This section confronts NSIF’s empirical results with the theoretical framework and literature, validating our research hypotheses regarding agile management characteristics, implementation mechanisms, and international comparisons.

7.1 Validation of Hypothesis 1: Characteristics of Agile Management

NSIF demonstrates agile management through rapid adaptation, collaboration, team empowerment, and innovation. Agency directors enjoy situational autonomy, allowing them to tailor decisions to local realities, particularly for seasonal activities and targeted operational improvements. However, adaptation occurs within a constraining regulatory framework, reflecting a hybrid model of managerial flexibility and legal compliance, similar to findings in Swiss public administrations (Stucki-Sabeti, 2022). Participatory management, initiated by the 2015 Director General’s instruction, reflects the institutional will to foster collective intelligence among operational teams, enabling employees to improve services by making timely, informed decisions (Gréselle-Zaïbet, 2019). Innovation is strongly evidenced by NSIF’s 2023 ISSA Special Distinction for Innovation for the Electronic Medical Card, demonstrating iterative, user-centered, and service-oriented innovation despite bureaucratic constraints (Azonuche, 2024).

In sum, Hypothesis 1 is confirmed: NSIF implements a contextualized, hybrid form of agile management in a public Algerian institution, blending managerial flexibility with regulatory compliance.

7.2 Validation of Hypothesis 2: Implementation Mechanisms

Agile dynamics at NSIF are implemented through decentralized decision-making, resource pooling, and collaborative practices oriented toward user satisfaction.

-Decentralization allows agency directors to adapt locally while remaining within legal limits, aligning with principles of maturity in change management (Lemieux, 2015).

-Resource pooling is the central operational mechanism, structuring agility by optimizing flows of human and material resources across NSIF agencies and even with other social security institutions (NSIF, NSSFSE, NPF). This extends cross-functional collaboration beyond institutional boundaries.

-Collaborative practices focus on co-creating value with users, exemplified by mobile counters, Espace El Hanaa, and adaptations for people with special needs, reflecting a customer-centric approach (Julian, 2019).

Resource pooling is thus not merely one mechanism among others but the core structure enabling decentralization and collaboration, highlighting a hierarchical mechanism unique to NSIF.

7.3 International Comparative Analysis

Comparing NSIF with international cases reveals both convergences and distinctive characteristics:

-Unlike New Zealand's "big bang" or gradual agile adoption (Julian, 2019), NSIF followed a progressive institutional adoption, driven centrally and diffused gradually.

-Compared to Swiss municipalities, where agility is emergent and fragmentary, NSIF achieved a more advanced agile maturity, likely due to its national scale and organizational complexity.

-The Electronic Medical Card project parallels US public sector IT agile transformations (Azonuche, 2024), yet NSIF achieved substantial agility without formal enterprise architecture frameworks, showing adaptability in resource-constrained contexts.

-NSIF demonstrates the institutionalization of collective intelligence, extending (Gréselle-Zaïbet, 2019) concept from temporary teams in extreme contexts to permanent large-scale public structures.

-The timeline of NSIF's transformation (2015–2023) aligns with Quebec observations on gradual internalization of agile change management (Lemieux, 2015), suggesting temporal constants in public-sector agility processes.

In conclusion, NSIF represents a unique model of agile public management in a developing country, combining regulated autonomy, resource pooling, participatory management, and innovation while maintaining compliance with the national legal framework.

-Synthesis

This study analyzed agile management practices at NSIF, focusing on the mechanisms enabling this organizational dynamic. Using semi-structured interviews with six sub-directors of the General Directorate, complemented by a comprehensive review of international literature, we confirmed our two research hypotheses while adding empirical and theoretical nuances.

The results indicate that NSIF has developed a contextualized and hybrid form of agility, combining adaptability to change, collaboration, empowerment, and innovation, while remaining compliant with the Algerian public sector's regulatory framework. Resource pooling emerges as the central mechanism structuring this agility, enabling decision decentralization and facilitating collaborative practices focused on user satisfaction.

International comparisons show that NSIF shares similarities with agile experiences in New Zealand, Switzerland, Quebec, and the United States, while exhibiting unique features: the institutionalization of collective intelligence at large scale, inter-organizational resource pooling, and a progressive institutional adoption path. These represent original contributions to agile management theory in public sector contexts.

The study has limitations. The sample of six respondents, although strategically selected, is limited; future research could expand to other hierarchical levels and social security institutions. Being cross-sectional, the study captures only a snapshot of NSIF's ongoing agile transformation; longitudinal research would better track evolving dynamics. Furthermore,

including the perspectives of operational employees and users would enrich understanding.

Future research could explore agile management in other Algerian social security institutions (NSSFSE, NPF), conduct comparative studies across the Maghreb or Francophone Africa, or engage in action-research to support the implementation of new agile practices, thereby enriching both theory and practice.

Our hypotheses were empirically validated at NSIF. Hypothesis 1, concerning the characteristics of agile management, is confirmed: NSIF adopts a collaborative, adaptable, and experimental approach, emphasizing transparency, team autonomy, participatory decision-making, and value creation for insured users. This approach promotes flexibility, continuous learning, and ongoing improvement of processes and services.

Within the framework of the national modernization strategy, NSIF established the Directorate of Modernization and Information Systems (following the 09/09/2019 order), integrating modernization into the fund's internal organization. Empirical confirmation is provided by interview responses and internationally recognized achievements. Notably, NSIF won the 2023 ISSA Special Distinction for Innovation for the *Electronic Medical Card* project, along with eligibility certificates for *Promoting Communication with Persons with Special Needs*, *Espace El Hanaa*, and the *Mobile Counter* project serving underserved areas.

8. Conclusion

This research analyzed agile management practices within the National Social Security Fund for Salaried Workers , focusing on the mechanisms that enable agility in a highly regulated public organizational context. Using a qualitative approach based on semi-structured interviews with senior managers and comparing findings with international literature, the study provides original empirical insights into the appropriation of agility in a social security organization.

The results confirm the first hypothesis (H1), showing that NSIF's agile management is characterized by adaptability to change, team collaboration and empowerment, and encouragement of innovation. This aligns with

(Julian, 2019), who emphasize that organizational agility depends less on strict methodological frameworks and more on the capacity to evolve practices according to environmental requirements. At NSIF, this agility is contextualized within a regulatory framework, producing a hybrid form that balances managerial flexibility with institutional compliance, extending current understanding of agility in public organizations.

The second hypothesis (H2) is also confirmed: NSIF implements agile dynamics through decision decentralization, resource pooling, and collaborative practices oriented toward user satisfaction. Empirical results highlight that resource pooling of human, material, and organizational resources functions as the central structuring mechanism of agility. This observation resonates with (Gréselle-Zaïbet, 2019), who emphasizes the importance of collective intelligence and cross-functional cooperation. Unlike studies focusing on small teams, NSIF demonstrates that these principles can be institutionalized at large scale, through durable inter-structure and inter-organization mechanisms.

NSIF's experience exemplifies the progressive and long-term adoption of agile practices, consistent with (Lemieux, 2015). It confirms that agile principles can be adapted and stabilized in public organizations without undermining regulatory and organizational foundations.

Beyond hypothesis validation, this study contributes to public management literature by proposing an empirical model of organizational agility in which resource pooling acts as a central lever for performance and innovation. It demonstrates that agility is compatible with public bureaucracy when supported by strong managerial leadership and mobilization of collective intelligence.

From a managerial perspective, several recommendations emerge:

1. Formalize and secure resource pooling mechanisms to ensure sustainability and strategic coherence.
2. Strengthen managerial competencies in agility, collaborative leadership, and change management to diffuse these practices across all hierarchical levels.

3. Develop performance evaluation tools integrating qualitative indicators, particularly regarding user satisfaction and inter-structure collaboration.
4. Encourage inter-organizational cooperation among social security institutions to reinforce agility at the national level.

Despite its contributions, the study has limitations, notably the sample size and the cross-sectional design. Future research could adopt a longitudinal approach, extend the study to other Algerian social security institutions, or conduct international comparative analyses to further consolidate and generalize the findings.

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