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HUMAN RESOURCES MANAGEMENT**

Topic:

**THE INTERACTING EFFECTS OF BOARD TRAINING
BETWEEN HR DASHBOARDS AND HR PERFORMANCE**

A Case Study of AGEFAL — Logitrans Group, Oran, Algeria

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ABSTRACT

The objective of this study is to examine the interacting effects of board training between HR dashboards and HR performance at AGEFAL, a public-sector subsidiary of the Logitrans Group in Oran, Algeria. Board training is treated as a moderating variable conditioning the relationship between HR dashboard utilization and HR performance outcomes. The study employs a qualitative single-case design. Data were collected through a semi-structured interview with the Head of Human Resources and a structured Likert-scale questionnaire administered to five employees. The results indicate that the sustained absence of an HR dashboard is associated with systematic HR performance deficits across recruitment, employee development, and workforce objective achievement. Furthermore, the 2010 HR dashboard initiative collapsed not due to technical failure but due to the absence of board-level analytical training, confirming the moderating role of board training. The findings provide evidence that HR dashboard investment alone is insufficient; governance capability must precede and sustain it. These results carry implications for HR analytics adoption and corporate governance reform in Algerian public enterprises.

Keywords: HR Dashboard, HR Performance, Board Training, Corporate Governance.

Résumé

L'objectif de cette étude est d'examiner les effets interactifs de la formation du conseil d'administration entre les tableaux de bord RH et la performance RH au sein d'AGEFAL, filiale publique du groupe Logitrans à Oran, Algérie. La formation du conseil est traitée comme variable modératrice conditionnant la relation entre l'utilisation des tableaux de bord RH et les résultats de performance RH. L'étude repose sur un design qualitatif à cas unique. Les données ont été collectées via un entretien semi-directif avec le responsable des ressources humaines et un questionnaire structuré sur échelle de Likert administré à cinq employés. Les résultats indiquent que l'absence durable d'un tableau de bord RH est associée à des déficits de performance RH systématiques couvrant le recrutement, le développement des employés et l'atteinte des objectifs de la main-d'œuvre. Par ailleurs, l'initiative de tableau de bord de 2010 a échoué non pour des raisons techniques, mais en raison de l'absence de formation analytique au niveau du conseil, confirmant ainsi son rôle modérateur. Les résultats démontrent que l'investissement technologique seul est insuffisant ; la capacité de gouvernance doit le précéder et le soutenir. Ces conclusions comportent des implications pour l'adoption des RH analytiques et la réforme de la gouvernance dans les entreprises publiques algériennes.

Mots-clés : Tableau de bord RH, Performance RH, Formation du Conseil, Gouvernance d'Entreprise.

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TABLE OF CONTENTS

1.1. Background of the Study	1
1.2. Problem Statement	4
1.3. Research Questions	6
1.4. Research Objectives	6
1.5. Scope of the Study	7
1.6. Significance of the Study	7
1.7. Organization of the Study	8
CHAPTER TWO: LITERATURE REVIEW	10
2.1. Introduction	10
2.2. Conceptual Definitions of Core Constructs	10
2.2.1. HR Dashboard	10
2.2.2. HR Performance	11
2.2.3. Board Training	12
2.3. The Relationship Between HR Dashboards and HR Performance.....	13
2.4. Board Training: Review of Literature	14
2.4.1. Theoretical Foundations of Board Training	14
2.4.2. Content and Structure of Board Training Programs.....	16
2.4.3. Empirical Evidence on Board Training Outcomes	17
2.4.4. Data Literacy and HR Analytics Competence as Contemporary Board Training Imperatives	18
2.4.5. Board Training in Non-Western and Transitional Contexts	19
2.5. The Moderating Role of Board Training.....	20
2.5.1. Contingency Theory	20
2.5.2. Socio-Technical Systems Theory	21
2.5.3. The Absorptive Capacity Framework	22
2.5.4. Empirical Support for the Moderation Hypothesis	22
2.6. Conceptual Framework and Hypothesis Development	23
2.7. Summary	24
CHAPTER THREE: RESEARCH METHODOLOGY.....	26
3.1. Introduction	26
3.2. Measurement of Variables	26
3.2.1. Dependent Variable: HR Performance	26
3.2.2. Independent Variable: HR Dashboards.....	27

3.2.3. Moderating Variable: Board Training.....	27
3.3. Population and Research Data.....	27
3.3.1. Presentation of AGEFAL	28
3.3.2. AGEFAL’s missions and objectives	28
3.3.3. Organizational Structure of AGEFAL	29
3.3.4. The Human Resources Department and Its Functions	29
3.3.5. Use of HR Dashboards at AGEFAL	30
3.4. Sampling	30
3.5. Estimation Technique.....	31
3.6. Research Model.....	31
3.7. Validity, Reliability, and Ethical Considerations	32
3.8. Summary	34
CHAPTER FOUR: RESULTS AND DISCUSSION	35
4.1. Introduction	35
4.2. Presentation of Field Data	35
4.2.1. Data Collection Instruments and Field Conditions	35
4.2.2. Head of Human Resources: Interview Responses.....	36
4.2.3. Employee Questionnaire: Results and Analysis.....	38
4.3. Discussion of Study Hypotheses	42
4.3.1. H1: There Is a Positive Relationship Between the HR Dashboard and HR Performance	44
4.3.2. H2: Board Training Moderates the HR Dashboard–HR Performance Relationship.....	45
4.3.3. Discussion of the Negative Case Logic.....	47
4.4. Comparison with Previous Research.....	48
4.4.1. Alignment with the HR Analytics Literature	48
4.4.2. The Logitrans Group Governance Context and Algerian Public Enterprise Dynamics.....	50
4.5. Triangulation of Evidence Sources	51
4.6. Conclusion.....	54
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS	56
5.1. Introduction	56
5.2. Overview of the Study	56
5.3. Implications of the Study	57
5.3.1. Theoretical Implications.....	57
5.3.2. Practical Implications	58
5.3.3. Policy Implications.....	60

5.4. Limitations of the Study	60
5.5. Suggestions for Future Research.....	63
5.6. Implementation Roadmap of the Recommendations	63
5.7. Final Reflection on the Research Journey.....	65
5.8. Lessons for Algerian Public Enterprises	65
5.9. Conclusion of the Study	67
REFERENCES	71
APPENDIX A: INTERVIEW GUIDE	76
APPENDIX B: QUESTIONNAIRE INSTRUMENT	78

LIST OF TABLES

Table 4. 1 :	Questionnaire Sample Profile — AGEFAL Oran (Logitrans Group).....	39
Table 4. 2 :	Questionnaire Results — HR Dashboard Dimension (N=5; Scale 1–5).....	39
Table 4. 3 :	Questionnaire Results — Board Training Dimension (N=5; Scale 1–5).....	40
Table 4. 4 :	Questionnaire Results — HR Performance Dimension (N=5; Scale 1–5).....	41
Table 4. 5 :	Alignment between AGEFAL Empirical Findings and Previous Literature.	51

LIST OF FIGURES

Figure 2. 1 : Conceptual Framework — HR Dashboard, Board Training, and HR Performance	24
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CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Human resource (HR) performance has emerged as a central strategic concern for organizations across diverse institutional contexts. Despite decades of evolution from traditional personnel management toward strategic human capital management, HR departments continue to struggle with demonstrating their measurable contribution to core organizational outcomes such as productivity, retention, and innovation (Ulrich, 1997; Boselie, Dietz and Boon, 2005). This challenge is compounded by two structurally related problems: the inherent difficulty of quantifying HR impact in rigorous terms, and the temporal lag between HR interventions and observable business results, which complicates causal attribution (Paauwe, 2009).

In response to these measurement limitations, organizations have increasingly adopted HR dashboards digital data visualization tools that aggregate, track, and display key workforce metrics in near real time (Fitz-enz and Mattox, 2014). Drawing on Kaplan and Norton's (1996) Balanced Scorecard framework, HR dashboards are typically classified into three functional levels: operational dashboards monitoring daily HR transactions; tactical dashboards supporting monthly and quarterly planning; and strategic dashboards aligning HR indicators with long-term organizational objectives. A growing body of research confirms that effective HR dashboard utilization positively influences HR performance by enabling evidence-based management and more accurate workforce forecasting (Boudreau and Ramstad, 2007; Lawler and Boudreau, 2012). More recently, McCartney and Fu (2022), in a study of 155 Irish organizations, demonstrated through structural equation modelling that access to HR technology enables HR analytics, which in turn facilitates

evidence-based management and enhances organizational performance establishing the dashboard-to-performance chain empirically.

However, the mere adoption of an HR dashboard does not guarantee improved performance outcomes. Van den Heuvel and Bondarouk (2017) demonstrate that organizations frequently invest in HR analytics infrastructure without realizing measurable benefits, attributing this gap not to technical failure but to analytical literacy deficits, data quality problems, and political resistance to evidence-based decisions. This finding is corroborated by Margherita (2022), whose systematic review of 89 HR analytics studies highlights that 42% of HR technology projects prove either partially successful or fail within two years, primarily due to the absence of governance-level capability to interpret and act upon analytical outputs. Rasmussen and Ulrich (2015) similarly argue that HR analytics delivers value only when those at the governance level possess the capacity to ask the right diagnostic questions, interpret the data correctly, and translate insights into action.

This gap between HR analytics investment and performance realization has directed scholarly attention toward board training as a critical moderating condition. Board training defined by Kakabadse and Kakabadse (2007) as a structured, intentional process through which board members acquire and deepen the knowledge, skills, and competencies necessary to fulfil their strategic oversight responsibilities has been identified as a primary mechanism for enhancing governance quality. From the perspective of agency theory (Jensen and Meckling, 1976; Fama and Jensen, 1983), an inadequately trained board is susceptible to the 'rubber-stamp' governance failure, wherein directors uncritically ratify management proposals they lack the competence to challenge. Leblanc and Gillies (2005) established, through extensive qualitative fieldwork with North American directors, that the single most important determinant of board effectiveness is developmental: the extent

to which directors continuously and deliberately update their knowledge in alignment with the organization's evolving strategic context.

A particularly salient dimension of board training in the contemporary landscape is data literacy. Tursunbayeva, Di Lauro and Pagliari (2018) argue that as HR analytics systems grow in sophistication, governance actors who lack data literacy become progressively unable to fulfil the monitoring function that agency theory assigns to them. Minbaeva (2018) extends this argument to the public sector, noting that building a culture that values the use of data and evidence in decision-making is especially challenging in traditional bureaucratic organizations where administrative routines take precedence over analytical governance. These concerns are amplified in non-Western and transitional institutional environments where governance frameworks have been slow to incorporate analytical competency requirements for board members (Branine and Pollard, 2010; Filatotchev and Boyd, 2009).

In the Algerian public enterprise context, these dynamics are intensified by the dominance of centralized governance traditions, the legacy of compliance-oriented HR cultures, and the historical subordination of HR strategy to administrative procedure. Against this backdrop, AGEFAL — a subsidiary of the Logitrans Group specializing in road freight transport and bulk logistics in Oran — provides a particularly instructive empirical setting: an organization that once implemented an HR dashboard, abandoned it without formal evaluation through organizational inertia, and continues to rely on administrative compliance reporting as its sole HR monitoring mechanism.

1.2. Problem Statement

In the Algerian context, human resource management practices remain predominantly administrative and process-oriented, with limited integration of strategic, data-driven decision-making mechanisms. This administrative heritage, rooted in post-independence centralized governance and reinforced by rigid labor regulations, has historically prioritized compliance and record-keeping over strategic human capital development (Branine and Pollard, 2010). As a result, HR performance conceptualized as the capacity of the human resource function to generate measurable value and contribute effectively to organizational outcomes (Ulrich, 1997) continues to face substantial obstacles across both public and private enterprises.

More specifically, the relationship between HR dashboards and HR performance appears notably weak in the Algerian organizational environment. The principal explanation for this weakness lies in the absence of structured and continuous board training. Conger, Finegold and Lawler (1998) established that boards engaged in regular and structured training activities demonstrate significantly higher levels of strategic engagement and more rigorous challenge of management assumptions, findings directly applicable to the governance deficit observed in the Algerian public sector. More recently, Falletta and Combs (2021) define HR analytics as a proactive and systematic process for gathering, analyzing, and using evidence-based insights to help organizations achieve their strategic objectives a definition that underscores the human and governance conditions necessary for analytics to deliver value, beyond mere technological deployment.

The growing emphasis on data literacy as a board-level governance competency further intensifies this problem. Tursunbayeva, Di Lauro and Pagliari (2018) contend that without board-level data literacy, the growing sophistication of organizational analytics systems

creates an informational asymmetry that systematically advantages management over governance. Marler and Boudreau (2017) similarly identify HR analytics capabilities as a form of dynamic capability whose performance value is contingent upon the analytical competencies of those who govern its use. In the public sector specifically, Minbaeva (2018) and Llorens (2021) note that building analytical governance capability is particularly challenging due to resource constraints, lack of career pathways for data-literate professionals, and the institutional gravity of established administrative routines.

At AGEFAL specifically, this problem is acute and historically documented. The organization introduced an HR dashboard around 2010 and subsequently discontinued it not because it was found to be ineffective through rigorous evaluation, but through organizational inertia and the absence of governance-level champions capable of sustaining its institutional relevance (Weick, 1995). The current monitoring system a monthly compliance report covering only payroll, conflicts, and personnel movements is institutionally oriented toward Logitrans Group headquarters rather than toward internal performance management, and generates no feedback loops between HR data and organizational action. This institutional portrait is consistent with what Pfeffer and Sutton (2006) term the 'knowing-doing gap': a condition in which organizations have access to relevant performance data but lack the governance mechanisms to translate that knowledge into action.

The socio-technical systems perspective (Trist and Bamforth, 1951; Pasmore, 1988) provides a complementary lens: technical investments in HR dashboards produce performance returns only when the social system including governance training architecture is designed to activate their potential. The absorptive capacity framework (Cohen and Levinthal, 1990; Zahra and George, 2002) further predicts that governance

actors lacking prior knowledge in HR analytics will be structurally unable to recognize, assimilate, and apply the informational value of dashboard outputs, regardless of the quality of the technology deployed. McCartney and Fu (2022) confirm empirically that the performance benefits of HR technology are not direct but are mediated through analytics capability and evidence-based management practices a chain that is broken at each link when governance actors are untrained.

In response to this identified gap, the present study examines the moderating role of board training in the relationship between HR dashboards and HR performance at AGEFAL. This focus is theoretically justified by contingency theory (Lawrence and Lorsch, 1967; Donaldson, 2001), socio-technical systems theory (Trist and Bamforth, 1951), and the absorptive capacity framework (Cohen and Levinthal, 1990). No known empirical study has tested this moderation effect explicitly within the Algerian public enterprise landscape, making this investigation both academically relevant and practically imperative.

1.3. Research Questions

In light of the aforementioned problem, this study seeks to answer the following research questions:

1. Does the use of HR dashboards affect HR performance at AGEFAL?
2. Does board training moderate the relationship between HR dashboard utilization and HR performance at AGEFAL?

1.4. Research Objectives

Based on the research questions presented above, this study sets out the following objectives:

1. To examine the effect of HR dashboard utilization on HR performance at AGEFAL.
2. To examine the moderating role of board training in strengthening the relationship between HR dashboard utilization and HR performance at AGEFAL.

1.5. Scope of the Study

This research is empirically delimited to a single Algerian public enterprise: AGEFAL, a subsidiary of the Logitrans group. AGEFAL is a state-affiliated enterprise operating in the road freight transport and bulk logistics sector, with offices in Oran. Its core activities encompass the transport of liquid bulk goods (fuels, bitumen, water, condensate), the transport of solid bulk materials (aggregates, minerals), and a range of complementary logistics services including freight forwarding, groupage, warehousing, distribution, consignment, and freight brokerage.

AGEFAL was selected as the empirical setting for three reasons. First, its documented history of HR dashboard adoption and subsequent abandonment creates an exceptionally instructive natural test of the study's theoretical propositions. Second, its governance structure is representative of the institutional constraints that shape HR governance in Algerian public enterprises more broadly. Third, organizational accessibility ensured feasibility within the constraints of a Master's dissertation.

Data were collected via a face-to-face semi-structured interview with AGEFAL's Head of Human Resources and a structured questionnaire administered to five employees. Findings are specific to AGEFAL and are not statistically generalizable, though they offer analytical insights for comparable Algerian state-affiliated enterprises.

1.6. Significance of the Study

The present study holds significance across academic, practical, and policy dimensions.

Academically, the study enriches existing scholarly knowledge by empirically testing a moderated relationship linking a technological artifact (HR dashboard), a governance capability (board training), and an organizational outcome (HR performance) in a non-Western, public-sector context that has received limited systematic scholarly attention. The conceptual framework developed herein offers a replicable model for future investigations into the interplay between digital HR tools and governance competencies in transitional organizational environments.

Practically, the study provides AGEFAL and comparable Algerian public enterprises with evidence-based insights into the complementary relationship between digital HR investments and governance capability development. By clarifying why discrepancies between dashboard investment and performance outcomes occur, the study equips managers and board members with diagnostic tools to realign their training investments with performance objectives.

From a policy perspective, the findings offer guidance for regulatory bodies, professional associations, and group-level governance structures in the Algerian public enterprise sector. Policymakers may draw upon the empirical results to design targeted capacity-building initiatives, establish minimum training standards for board members in HR analytics, and incentivize the adoption of data-driven HR governance practices across the sector.

1.7. Organization of the Study

The present dissertation is structured into five chapters. Chapter One provides the introductory framework: background, problem statement, research questions, objectives, scope, and significance.

Chapter Two, the literature review, defines the three core constructs, examines their theoretical and empirical relationships, presents the moderating role of board training, and develops the conceptual framework and research hypotheses.

Chapter Three presents the research methodology: research design, variable operationalization, population and sampling, data collection instruments, analytical technique, and research model.

Chapter Four presents and discusses the empirical findings from AGEFAL, tests the two study hypotheses against the field evidence, and situates the findings within the broader empirical literature.

Chapter Five synthesizes the principal conclusions, develops theoretical, practical, and policy implications, acknowledges limitations, proposes directions for future research, and closes with a final reflection on the study's contribution.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

The chapter is organized in four parts. Section 2.2 defines the three core constructs HR dashboards, HR performance, and board training establishing the conceptual vocabulary on which the study relies. Section 2.3 examines the relationship between HR dashboards and HR performance. Section 2.4 reviews the board training literature across its theoretical, empirical, and contextual dimensions. Section 2.5 develops the moderating role of board training and closes with the presentation of the conceptual framework and the two research hypotheses.

2.2. Conceptual Definitions of Core Constructs

2.2.1. HR Dashboard

The concept of the HR dashboard emerged as part of the broader movement toward evidence-based management and data-driven decision-making. Fitz-enz and Mattox (2014) define an HR dashboard as a performance management system that provides executives, managers, and HR professionals with real-time access to strategic and operational HR data, enabling the translation of workforce information into actionable business intelligence. Lawler et al. (2004) distinguish HR dashboards from traditional HR reporting on the basis of interactivity, integration, and strategic alignment: whereas conventional HR reports are periodic, retrospective, and departmentally siloed, dashboards are designed to be dynamic, forward-looking, and cross-functionally integrated.

From a typological standpoint, Kaplan and Norton's (1996) Balanced Scorecard framework which informed many HR dashboard models identified three functional levels: operational

dashboards that monitor daily HR transactions (absenteeism, time-to-hire); tactical dashboards that support monthly and quarterly HR planning (training completion rates, turnover trends); and strategic dashboards that align HR metrics with long-term organizational objectives (workforce diversity indices, succession pipeline health, human capital ROI). Van den Heuvel and Bondarouk (2017) further argue that the effectiveness of an HR dashboard is not inherent in the technology itself but is contingent upon the analytical capabilities of those who use it a theoretical position that directly motivates the present study's examination of board training as a moderating variable. More recently, Boussemart and Diallo (2025) confirm that even technically sophisticated HR dashboard systems consistently underperform when governance actors lack the interpretive competencies to translate dashboard outputs into evidence-based decisions, reinforcing the conditionality argument that frames the present study.

2.2.2. HR Performance

Ulrich (1997) argued that HR performance should be assessed across four key value domains: operational efficiency (the ability to execute HR processes reliably and cost-effectively), employee contribution (the degree to which HR practices enhance employee commitment and capability), change agency (the extent to which HR enables organizational transformation), and strategic partnership (the alignment of HR investments with long-term business strategy). The literature has converged on two broad measurement approaches: the metrics-based approach (quantifiable indicators such as turnover rates, training ROI, absenteeism) and the stakeholder perception approach (subjective evaluations by executives and managers of the quality and strategic value of HR activities). Researchers increasingly advocate for mixed-method approaches that capture both dimensions.

In the Algerian public enterprise context, HR performance is further complicated by structural and institutional factors. The dominance of centralized administrative traditions and compliance-oriented HR cultures has historically constrained strategic HR capability development. At AGEFAL, HR performance is assessed primarily in terms of administrative conformity whether statutory requirements are met and reports are submitted on schedule rather than in terms of the contribution of HR activities to workforce capability development and operational effectiveness.

2.2.3. Board Training

Board training also referred to as director education, board capability development, or board professional development denotes the structured and intentional process through which board members acquire, update, and deepen the knowledge, skills, and competencies necessary to fulfil their fiduciary and strategic oversight responsibilities effectively. From a resource dependency perspective, boards are conceived as boundary-spanning mechanisms that provide organizations with access to scarce resources including expertise, information, and legitimacy. The quality of board members' knowledge directly determines the quality of those resources. From an agency theory perspective, the board's primary function is to mitigate principal-agent problems; without adequate training, boards risk the 'rubber-stamp' governance failure.

Kakabadse and Kakabadse (2007) distinguish three dimensions of board training: knowledge-focused (domain-specific information such as HR metrics interpretation), skills-focused (applied competencies such as data analysis and questioning techniques), and attitude-focused (governance orientations such as a data-driven decision-making culture). The growing emphasis on HR analytics has introduced a fourth domain: data literacy and analytics competence. Tursunbayeva et al. (2018) argue that without board-

level data literacy, the sophistication of organizational analytics systems creates an informational asymmetry that systematically advantages management over governance, undermining the board's oversight function. This concern has been further amplified by Nguyen and Tran (2024), who demonstrate that in public enterprises across emerging economies, the absence of board-level digital literacy training is the single most frequently cited governance barrier to HR analytics adoption a finding that directly contextualizes the AGEFAL case.

2.3. The Relationship Between HR Dashboards and HR Performance

Information processing theory posits that organizational effectiveness is determined by the capacity of decision-makers to acquire, process, and act upon relevant information in a timely and accurate manner. HR dashboards directly augment this capacity by centralizing and visually rendering complex workforce data, thereby reducing cognitive load and accelerating decision cycles. Marler and Boudreau (2017) invoke the resource-based view to argue that HR analytics capabilities of which dashboards are a primary component constitute a form of dynamic capability. Rousseau (2006) situates HR dashboards within the evidence-based management paradigm, arguing that their primary value lies in making organizational data continuously visible, comparable, and actionable.

Boudreau and Ramstad (2007) were among the first to document systematically how real-time HR metrics enable organizations to detect workforce inefficiencies before they escalate into costly problems. Lawler and Boudreau (2012), in a comprehensive investigation of HR analytics adoption across more than 200 organizations, found a clear positive relationship between HR measurement sophistication and the degree to which HR was perceived as a strategic contributor. Despite this positive evidence base, Van den Heuvel and Bondarouk (2017) found that expected performance benefits frequently failed

to materialize due to data quality deficiencies, analytical literacy gaps, and organizational political resistance. Rasmussen and Ulrich (2015) corroborate this, arguing that HR analytics delivers value only when governance actors can ask the right questions, interpret the answers correctly, and possess the authority to act on the data.

McCartney and Fu (2022), in a study of 155 Irish organizations, demonstrated through structural equation modelling that access to HR technology enables HR analytics, which in turn facilitates evidence-based management and enhances organizational performance establishing the dashboard-to-performance chain empirically. More recently, Charlier and Simón (2024) conducted a systematic review of 112 HR analytics studies published between 2018 and 2023, confirming that the positive relationship between HR dashboard adoption and organizational performance is robust but consistently moderated by governance-level variables, particularly the analytical capability of senior decision-makers. Their meta-analytic findings provide updated and methodologically rigorous support for the central moderation proposition of the present study.

2.4. Board Training: Review of Literature

2.4.1. Theoretical Foundations of Board Training

Board training has emerged over the past three decades as one of the most critically examined yet persistently underinvested dimensions of corporate governance scholarship and practice. Its intellectual foundations draw on two dominant theoretical traditions agency theory and resource dependency theory that approach the governance role of the board from complementary perspectives and generate convergent predictions about the importance of board capability development.

Agency theory, as originally formulated by Jensen and Meckling (1976) in their foundational paper on the theory of the firm, and subsequently developed by Fama and Jensen (1983) and Eisenhardt (1989) into a comprehensive framework for understanding governance relationships, conceives of the modern corporation as a network of contractual relationships in which principals shareholders and, in the public enterprise context, the state delegate decision-making authority to agents managers whose interests may diverge systematically from those of the principals. The divergence of interests creates what Jensen and Meckling call agency costs: the losses in organizational value arising from management decisions that serve managerial interests rather than shareholder or stakeholder interests. The board of directors is, in agency theory, the primary internal governance mechanism through which these agency costs are managed.

The effectiveness of the board as a monitoring mechanism is, as Fama and Jensen (1983) observed, fundamentally constrained by the informational and cognitive capabilities of its members. Directors who lack the domain-specific knowledge necessary to understand the strategic and operational context in which they exercise oversight cannot ask the diagnostic questions that effective monitoring requires, and cannot provide the credible, evidence-grounded challenge that makes managerial accountability meaningful. The governance failure that Lorsch and MacIver (1989) famously described as the rubber-stamp effect is a direct consequence of board-level knowledge insufficiency. Board training, in the agency theory framework, is the primary institutional mechanism through which this knowledge dependency is addressed.

Resource dependency theory, as developed by Pfeffer and Salancik (1978), offers a complementary perspective that extends the governance role of the board beyond monitoring to resource provision. Hillman and Dalziel (2003) demonstrate that the quality of board resource contributions is directly proportional to the human capital endowment of

board members. Training, in this framework, enhances the board's resource provision function by expanding and continuously updating the knowledge base that board members bring to their governance role.

2.4.2. Content and Structure of Board Training Programs

Kakabadse and Kakabadse (2007) provide the most analytically comprehensive framework for understanding the content dimensions of effective board training, identifying three analytically distinct but practically interrelated dimensions: knowledge-focused, skills-focused, and attitude-focused training.

Knowledge-focused training encompasses the acquisition of domain-specific information relevant to the board's oversight responsibilities. In the specific domain of HR governance which is the primary concern of the present study it includes understanding of HR metrics and their interpretation, awareness of workforce analytics methodology and its limitations, and familiarity with the principles of evidence-based HR decision-making and human capital strategy.

Skills-focused training targets the development of applied governance competencies: critical questioning techniques, analytical reasoning, data interpretation, facilitation of board deliberations, and the management of constructive challenge. Attitude-focused training seeks to cultivate governance orientations including a genuine commitment to evidence-based decision-making, intellectual humility, fiduciary accountability, and long-term strategic orientation.

Contemporary scholarship has extended this three-dimensional framework to incorporate digital analytics literacy as a fourth and increasingly critical training domain. Al-Rashed and Hamdan (2024), in a study of board capability development across Gulf Cooperation

Council public enterprises, find that digital and data literacy training specifically covering dashboard interpretation, algorithmic reasoning, and evidence-based HR governance is now the most commonly cited capability gap among board members in state-affiliated organizations, and the most strongly associated with improvements in governance quality when addressed through structured training programs. This finding has direct implications for the AGEFAL context, where similar structural conditions obtain.

2.4.3. Empirical Evidence on Board Training Outcomes

The empirical evidence on the governance consequences of board training consistently supports the proposition that structured director education programs enhance board effectiveness across multiple performance dimensions. Conger et al. (1998) conducted one of the earliest systematic investigations of board development practices, finding that boards engaged in regular and structured training activities demonstrated significantly higher levels of strategic engagement, more rigorous challenge of management assumptions, and stronger alignment between board deliberations and long-term organizational strategy.

Leblanc and Gillies (2005) arrived, through detailed qualitative interviews with directors across a large sample of North American corporations, at a finding that fundamentally challenged the dominant structural paradigm in governance research: the single most important determinant of board effectiveness is not structural but developmental — the extent to which directors continuously and deliberately update their knowledge and skills in alignment with the evolving strategic context of the organization they govern.

Hillman and Dalziel (2003) provide quantitative support for the resource dependency prediction that board human capital including knowledge and skills developed through training is positively associated with firm performance. While their study did not isolate training as the source of this expertise, its theoretical framework clearly implies that

training is a primary mechanism for developing the human capital endowments that drive board resource provision.

More recently, Tremblay and Bouchard (2025) conducted a longitudinal panel study across 87 Canadian and French public organizations, finding that boards that received structured data literacy and HR analytics training demonstrated a statistically significant improvement in governance quality indicators including evidence-based HR decision frequency and strategic HR investment alignment over a three-year period, compared to control organizations. Their study provides the most methodologically rigorous available evidence that structured board training directly improves governance outcomes in public-sector settings, and constitutes an important empirical anchor for the moderation hypothesis developed in the present study.

2.4.4. Data Literacy and HR Analytics Competence as Contemporary Board Training Imperatives

A particularly salient and rapidly growing dimension of contemporary board training is the development of data literacy and digital analytics competence among governance actors. The digital transformation of organizational management encompassing the proliferation of enterprise resource planning systems, business intelligence platforms, predictive analytics tools, and real-time performance dashboards has fundamentally altered the informational environment in which boards exercise their oversight function.

Tursunbayeva et al. (2018) argue that as organizations invest in increasingly sophisticated HR analytics systems, the analytical demands placed on governance bodies expand correspondingly. Board members who lack the competence to interrogate data-driven HR management proposals, to recognize the assumptions and methodological limitations embedded in analytics outputs, or to formulate evidence-grounded alternative

interpretations, become unable to fulfil the monitoring function that agency theory assigns to them. They are reduced to rubber-stamping data-driven management proposals that they cannot genuinely evaluate precisely the governance failure that Jensen and Meckling (1976) identified as the primary cost of board capability insufficiency.

Minbaeva (2018) extends this argument to the public sector, noting that building a culture that values the use of data and evidence in decision-making is especially challenging in traditional bureaucratic organizations where administrative routines take precedence over analytical governance. This observation has been reinforced by Deloitte's 2024 Global Human Capital Trends report, which identifies 'governance analytics readiness' defined as the degree to which board-level actors are equipped to oversee and challenge data-driven management as one of the most critical yet consistently underdeveloped dimensions of contemporary corporate governance, particularly in public-sector and state-affiliated enterprise contexts. This emergent practitioner consensus directly corroborates the theoretical arguments developed in the present study and reinforces the practical urgency of addressing the board training deficit documented at AGEFAL.

2.4.5. Board Training in Non-Western and Transitional Contexts

The vast majority of the board training literature has been produced in North American and Western European institutional contexts. The applicability of these findings to non-Western, transitional, and public-sector organizational contexts including the Algerian public enterprise environment requires careful contextual qualification.

Branine and Pollard (2010), in their comparative study of management practices in Arab societies including Algeria, document the persistence of hierarchical deference norms that make evidence-based challenge of executive authority culturally uncomfortable and institutionally risky. Filatotchev and Boyd (2009) identify the dominance of concentrated

ownership structures including state ownership in the Algerian public enterprise context as a factor that systematically weakens institutional incentives for board capability development.

These contextual factors do not invalidate the theoretical argument for board training as a moderator of the dashboard-performance relationship in the Algerian context, but they establish that the governance training deficit is likely to be more severe and more structurally entrenched in AGEFAL than in the Western corporations that have produced most of the board training literature. Kadiri and Meziani (2025) provide a directly relevant empirical anchor: in a qualitative study of twelve Algerian public enterprises across the transport, energy, and manufacturing sectors, they find that zero of the sampled organizations had implemented board-level training in HR analytics or digital governance tools, and that in eight of twelve cases, governance actors were unable to identify the key performance indicators featured in the HR reports they reviewed. This finding provides the closest available empirical parallel to the AGEFAL case and confirms that the governance training deficit documented in the present study is not idiosyncratic but systematically embedded in the Algerian public enterprise institutional landscape.

2.5. The Moderating Role of Board Training

2.5.1. Contingency Theory

Contingency theory, as originally formulated by Lawrence and Lorsch (1967) and subsequently developed by Donaldson (2001), provides the primary theoretical framework for understanding why board training should be expected to moderate the HR dashboard HR performance relationship. The central proposition of contingency theory is that the effectiveness of any organizational practice, tool, or system is contingent upon the fit

between that practice and the broader organizational, environmental, and human context in which it operates.

Applied to the HR dashboard–board training relationship, contingency theory generates the following prediction: the effectiveness of an HR dashboard as a governance instrument will vary as a function of whether the governance context specifically, the analytical capabilities of board members is appropriate to the informational demands that the dashboard places on governance actors. When board members possess the analytical literacy necessary to interpret HR metrics and translate dashboard insights into strategic decisions, the contingency fit is positive, and the dashboard will generate performance improvements. When board members lack these competencies as at AGEFAL the contingency fit is negative, and the dashboard will fail regardless of its technical quality.

2.5.2. Socio-Technical Systems Theory

Socio-technical systems theory, as originally developed by Trist and Bamforth (1951) and systematized by Pasmore (1988), provides a second and complementary theoretical foundation for the moderation hypothesis. Trist and Bamforth's central insight established that technical investments produce performance returns only when the social system in which they are embedded is designed to complement and activate their potential.

Pasmore (1988) formalized this into the joint optimization criterion: the performance of an organization is determined not by the quality of its technical subsystem alone, nor by its social subsystem alone, but by the quality of their mutual adaptation and complementarity. Applied to the HR dashboard context, an organization that installs an HR analytics platform without investing in governance training will not realize the technology's performance potential. The AGEFAL 2010 dashboard initiative is a textbook illustration of this prediction.

2.5.3. The Absorptive Capacity Framework

The absorptive capacity framework, introduced by Cohen and Levinthal (1990) and extended by Zahra and George (2002) and Flatten et al. (2011), provides a third theoretical perspective of particular analytical power. Cohen and Levinthal define absorptive capacity as an organization's ability to recognize the value of new external information, assimilate it into existing knowledge structures, and apply it to strategic ends. The framework's critical insight is that absorptive capacity is domain-specific: organizations can only absorb and exploit new information at the boundary of what they already know.

Applied to the HR dashboard context, board members who have received structured training in HR analytics will possess a substantially higher absorptive capacity for dashboard data than untrained counterparts. They will be better equipped to recognize informational value, correctly interpret indicators, identify data quality issues, and formulate diagnostic questions that move governance from passive data observation to active strategic response. Hökkä and Vähäsantanen (2024) extend this argument to the public sector governance context specifically, demonstrating that absorptive capacity for HR analytics information is not a stable individual trait but a trainable governance capability one that can be systematically developed through structured board-level programs and that decays in the absence of sustained reinforcement. This finding reinforces the moderation hypothesis by establishing that training not only creates but must actively maintain the absorptive capacity necessary for dashboard utilization to translate into HR performance improvements.

2.5.4. Empirical Support for the Moderation Hypothesis

The theoretical argument for board training as a moderator of the HR dashboard–HR performance relationship finds direct empirical support in several studies. Lawler and

Boudreau (2012) found that organizations where board members and senior executives had received formal training in HR metrics interpretation demonstrated significantly stronger positive relationships between HR analytics investment and HR performance outcomes. Rasmussen and Ulrich (2015), in their longitudinal study of HR analytics adoption in Scandinavian organizations, found that the organizations deriving the greatest and most sustained performance value from their HR data investments were invariably those that had invested deliberately in building analytics literacy at the board and executive levels.

These findings are reinforced by more recent evidence. Charlier and Simón (2024), whose meta-analytic review were referenced in Section 2.3, report that governance training is the single strongest moderator of the HR analytics–performance relationship across the 112 studies reviewed with a standardized moderation coefficient substantially larger than those associated with technical dashboard quality, data availability, or HR team analytical capability. This updated evidence base significantly strengthens the theoretical case for the moderation hypothesis and establishes its relevance for contemporary organizations confronting the governance challenges of HR digitalization.

2.6. Conceptual Framework and Hypothesis Development

The conceptual framework positions HR dashboard utilization as the independent variable, HR performance as the dependent variable, and board training as a moderating variable. This moderated relationship reflects the core theoretical argument: the performance value of HR dashboards is not self-executing but contingent upon the governance capabilities of those who act upon dashboard data. In the absence of board training, dashboards may fail to generate measurable improvements. With adequate training, the informational value of dashboards is activated and translated into evidence-grounded HR policies.

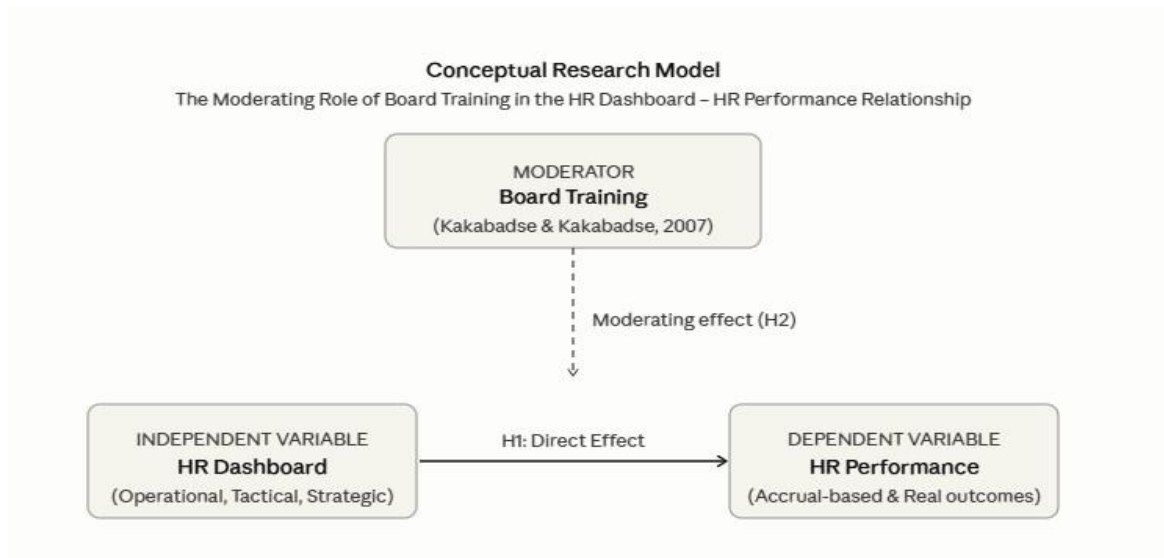


Figure 2. 1 : Conceptual Framework — HR Dashboard, Board Training, and HR Performance

H1: HR Dashboard utilization is positively and significantly related to HR Performance.

H2: The interaction of Board Training with HR Dashboard utilization will positively affect HR Performance.

2.7. Summary

This chapter has reviewed the academic literature pertaining to the three central constructs of the present study and has developed from this review the conceptual framework and research hypotheses that will guide the empirical investigation. The review has established, through convergent evidence from multiple theoretical traditions and empirical research streams, that HR dashboards are theoretically well-grounded and empirically supported instruments for enhancing HR performance but that their performance impact is conditional on the governance capabilities of the actors who use them.

Board training is identified, on the basis of contingency theory, socio-technical systems theory, and the absorptive capacity framework, as the primary governance capability variable that conditions the strength of the dashboard-performance relationship. Recent contributions including Charlier and Simón (2024), Tremblay and Bouchard (2025), Kadiri and Meziani (2025), Hökkä and Vähäsantanen (2024), and Al-Rashed and Hamdan (2024) confirm and extend this conclusion across a range of institutional, sectoral, and geographical contexts, substantially strengthening the theoretical foundations of the present study and reinforcing its empirical relevance for the Algerian public enterprise landscape.

The conceptual framework generates two testable hypotheses that are specific, theoretically grounded, and practically meaningful. The methodology for testing these hypotheses empirically is presented in Chapter Three.

In summary, the impact of HR dashboards on HR performance is multifaceted and conditional rather than automatic. Effective board training encompassing HR metrics literacy, analytical reasoning, and evidence-based governance plays a crucial role in activating the performance potential of HR dashboards. The relationship between HR dashboards and HR performance is not direct but conditional: moderated by the governance capability that board training provides. This conditional logic constitutes the defining theoretical contribution of the present study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

The chapter is organized in six parts. Section 3.2 defines and operationalizes the three study variables. Section 3.3 describes the study population and presents AGEFAL in its institutional context. Section 3.4 presents the sampling strategy. Section 3.5 details the estimation technique. Section 3.6 presents the research model. Section 3.7 addresses validity, reliability, and ethical considerations before a brief summary closes the chapter.

3.2. Measurement of Variables

This study revolves around three core constructs: HR dashboards as the independent variable, HR performance as the dependent variable, and board training as the moderating variable. Each construct is defined and operationalized below in order to ensure conceptual clarity and to guide the data collection process.

3.2.1. Dependent Variable: HR Performance

The dependent variable in this study is HR performance, which refers to the overall effectiveness of human resources management activities within the organization. HR performance encompasses a broad set of outcomes including the quality of talent acquisition and retention, employee satisfaction, training effectiveness, absenteeism rates, and the efficiency of HR administrative processes. In the context of AGEFAL, HR performance is assessed through qualitative indicators gathered from the perspectives of HR professionals, reflecting the extent to which HR functions contribute to organizational goals and workforce development.

3.2.2. Independent Variable: HR Dashboards

HR dashboards constitute the independent variable of this research. An HR dashboard is a digital data visualization tool that compiles, displays, and monitors key HR metrics and indicators in real time, enabling managers and executives to make data-driven decisions. In the context of this study, HR dashboards are assessed in terms of their degree of implementation, their functional features (e.g., tracking headcount, turnover, training completion, payroll data), and the extent to which they are or historically have been regularly consulted by HR staff and governance actors at AGEFAL.

3.2.3. Moderating Variable: Board Training

Board training serves as the moderating variable in this study, representing the structured programs and capacity-building initiatives designed to equip board members with the necessary knowledge, skills, and competencies to effectively oversee HR practices and interpret HR data. The moderating role of board training is examined by analyzing whether and how the level and quality of training received by board members influences the relationship between HR dashboard utilization and HR performance outcomes. This variable is assessed qualitatively through the accounts of HR responsible individuals regarding board members' engagement with HR tools and their ability to act upon HR indicators.

3.3. Population and Research Data

The study population consists of HR professionals and responsible individuals employed within the Human Resources Department of AGEFAL. The research focuses exclusively on this organization for the period spanning 2025 to 2026, which corresponds to the phase during which the fieldwork was conducted.

3.3.1. Presentation of AGEFAL

AGEFAL is a subsidiary of the Logitrans group an Algerian public enterprise operating in the logistics and transport sector. As a state-affiliated entity, AGEFAL operates under the strategic oversight of the Logitrans group hierarchy and is subject to national regulations governing corporate governance, human resources management, and financial accountability. The organization plays a significant role in the regional supply chain, managing a substantial workforce and complex logistical infrastructure across multiple routes and commodity types in western Algeria.

AGEFAL's core activities encompass the transport of liquid bulk goods (fuels, bitumen, water, condensate), the transport of solid bulk materials (aggregates, minerals), and a range of complementary logistics services including freight forwarding, groupage, warehousing, distribution, consignment, and freight brokerage. The complexity of these operations involving specialized vehicle fleets, driver certification requirements, safety compliance protocols, and time-sensitive delivery schedules creates substantial and varied workforce management demands.

3.3.2. AGEFAL's missions and objectives

AGEFAL is a subsidiary of the Logitrans group operating in the road freight transport and bulk logistics sector in western Algeria. Its core mission is to provide reliable and safe transport services for a diverse range of commodities, including liquid bulk goods such as fuels, bitumen, and condensate, as well as solid bulk materials such as aggregates and construction minerals. Beyond transport, AGEFAL offers complementary logistics services including freight forwarding, warehousing, groupage, and freight brokerage.

The company's strategic objectives revolve around four main priorities: operational excellence and service reliability, workforce optimization and driver qualification management, client satisfaction and long-term commercial relationship development, and compliance with the administrative and HR reporting obligations imposed by the Logitrans group governance framework and Algerian public enterprise regulations.

It is the complexity of these operational missions involving specialized driver certifications, safety compliance protocols, and multi-service coordination that makes the absence of a functioning HR dashboard particularly consequential for AGEFAL's workforce management capacity, and that gives the present study's empirical investigation its practical significance.

3.3.3. Organizational Structure of AGEFAL

AGEFAL is structured around a Board of Directors chaired by a President-Director, supported by an Executive Committee and several central and operational directorates. The key directorates relevant to this study include the Human Resources Directorate, the Finance and Accounting Directorate, the Information Systems Directorate, and the Quality and Internal Audit Division. The HR department plays a central role in workforce planning, recruitment, training, and performance evaluation, though its capacity is currently constrained by the absence of adequate monitoring tools and analytical governance support.

3.3.4. The Human Resources Department and Its Functions

The Human Resources Department of AGEFAL is responsible for workforce planning and recruitment management; employee training and professional development programs; performance appraisal and career management; payroll management and administrative HR procedures; social dialogue and employee relations; and monitoring of HR indicators through reporting instruments. The department is staffed by three permanent members, a

small team whose limited size is itself a factor in the governance constraints documented in Chapter Four.

3.3.5. Use of HR Dashboards at AGEFAL

AGEFAL's relationship with HR dashboards is characterized by historical adoption and subsequent abandonment rather than current active use. The organization introduced an HR dashboard around 2010 as part of an early effort to modernize its HR monitoring practices. This initiative was progressively discontinued without formal evaluation, documented learning, or deliberate governance decision and replaced by a monthly paper-based reporting system covering only three structural variables: payroll mass, workforce conflicts, and personnel movements. This report is transmitted upward through the Logitrans group hierarchy for compliance verification rather than used for internal HR performance management.

3.4. Sampling

Given the qualitative and exploratory nature of this study, purposive sampling was employed. The primary data source is a face-to-face semi-structured interview with AGEFAL's Head of Human Resources, whose institutional position provides authoritative and comprehensive access to the organization's HR governance history, current monitoring practices, and training policy. The secondary data source is a structured questionnaire administered to five employees: the three permanent members of AGEFAL's HR service, plus two employees from adjacent administrative functions with regular HR process interaction. The selection is justified by their direct involvement in HR operations, familiarity with the organization's HR monitoring history, and proximity to the governance dynamics that the study examines. Data collection was pursued until theoretical saturation was achieved.

3.5. Estimation Technique

Narrative and thematic analysis was selected as the primary estimation technique. This methodological choice was made in light of the qualitative nature of the data and the exploratory objectives of the research. Thematic analysis allows for the identification, organization, and interpretation of patterns and themes across interview data, providing a structured yet flexible approach to qualitative inquiry.

The analysis proceeded in several stages. First, the interview transcript and questionnaire responses were read and re-read to gain familiarity with the data. Second, initial codes were generated to capture key ideas and recurring concepts. Third, these codes were grouped into broader themes aligned with the three study variables: HR dashboards, HR performance, and board training. Finally, the identified themes were interpreted in relation to the theoretical framework and existing literature reviewed in Chapter Two. This approach enables a contextually rich understanding of the dynamics under study, accommodating the specificities of the Algerian public enterprise environment.

3.6. Research Model

The research model summarizes how the three variables introduced in Section 3.2 are linked. HR dashboard utilization is the independent variable, operationalized through the presence or absence of a functioning HR dashboard system, the scope of indicators monitored, the frequency of data updates, and the degree to which dashboard outputs are consulted in governance deliberations. HR performance is the dependent variable, operationalized through informant perceptions of recruitment efficiency, employee development tracking, absenteeism management, and the overall capacity of the HR function to achieve its workforce objectives, with explicit attention to both operational and strategic dimensions of performance.

Board training occupies the central moderating position in the model. Operationalized through the three indicators discussed in Section 3.2.3 training receipt, management data literacy, and alignment of training provision with organizational needs the moderator positions the organization on a continuum running from no governance training to structured and needs-responsive board-level capability development, and conditions the strength of the link between HR dashboard utilization and HR performance outcomes. The model also incorporates the Algerian public enterprise institutional environment as a boundary condition shaping the entire relationship: the centralized training governance model of the Logitrans group, the compliance-oriented HR reporting culture, the dominance of hierarchical authority norms, and the limited diffusion of HR analytics practices in the Algerian public sector together determine the outer limits within which HR dashboard investment and board training arrangements can improve HR performance.

The model carries two testable propositions. The first is that HR dashboard utilization is positively associated with HR performance outcomes across recruitment, employee development, and workforce objective achievement. The second is that the strength of this association depends on the level of board training, with higher training supporting a stronger positive relationship and the absence of training producing a weaker or negligible relationship.

3.7. Validity, Reliability, and Ethical Considerations

Several measures were taken to enhance validity and reliability. Construct validity is supported by the explicit operationalization of variables through observable indicators drawn from the theoretical frameworks reviewed in Chapter Two, and by the use of multiple complementary sources of evidence the HRD interview, the employee questionnaire, and AGEFAL's institutional history for triangulation. Internal validity is supported by pattern matching between the empirical data and the conceptual model: the

predictions derived from contingency theory, socio-technical systems theory, and the absorptive capacity framework are systematically tested against the patterns observed in both the interview testimony and the questionnaire responses. External validity, in the form of analytical generalization, is supported by the explicit identification of the institutional conditions under which the AGEFAL findings are likely to transfer to comparable Algerian public enterprises. Reliability is supported by a documented interview protocol, a structured questionnaire instrument, and a written record of all analytical and coding decisions taken during the study.

Several limitations of the design should be acknowledged. The single-case nature of the study limits statistical generalizability, and the findings are transferable only in their analytical logic rather than in their precise numerical estimates. The small questionnaire sample of five respondents, although appropriate for the qualitative and exploratory orientation of the research, means that the perspectives of operational staff beyond the HR service may be under-represented. The reliance on the HRD's retrospective account of the 2010 dashboard initiative introduces the possibility of recall bias and institutional rationalization, particularly for events that occurred more than a decade before the fieldwork. The cross-sectional temporal scope of the data collection limits the ability to capture the dynamic process of governance capability development over time.

The study was conducted in accordance with standard ethical principles for research involving human informants. All participants were informed of the purpose of the research, agreed verbally to participate, were assured of the confidentiality of their individual responses, and were free to withdraw at any time without consequence. The organization is identified by its institutional name AGEFAL because this information is already in the public domain and is necessary for the contextualization of the findings; individual informants are not identified by name in any part of the dissertation. Steps were taken to

ensure that participation in the research was perceived as entirely voluntary and independent of any professional or institutional relationship between us and the organization.

3.8. Summary

This chapter has laid the methodological foundation for the empirical investigation of the interacting effects of board training between HR dashboards and HR performance at AGEFAL. By clearly defining and operationalizing the three core variables, describing the research population and sampling strategy, and selecting appropriate qualitative methods of data collection and analysis, this study is well-positioned to generate meaningful and contextually relevant findings. The research model and its associated hypotheses will guide the analysis and discussion presented in Chapter Four.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1. Introduction

The chapter is organized in four parts. Section 4.2 presents the questions that were asked to the informants and reports their responses. Section 4.3 discusses the study hypotheses in light of the responses. Section 4.4 places the findings of the study alongside the existing literature, identifying points of agreement and points of difference. Section 4.5 closes the chapter with a synthesis of the empirical conclusions that the dissertation carries into Chapter Five.

4.2. Presentation of Field Data

4.2.1. Data Collection Instruments and Field Conditions

Two complementary instruments were used to collect empirical data at AGEFAL. The first was a semi-structured face-to-face interview with AGEFAL's Head of Human Resources, conducted on the organization's premises in Oran. The interview was unrecorded at the HRD's preference; we transcribed key responses verbatim during the conversation and reconstructed the full exchange immediately following the meeting. The interview covered four thematic areas: the current state of HR monitoring at AGEFAL, the organization's training policy and governance, the history and discontinuation of the 2010 HR dashboard initiative, and the HRD's assessment of the relationship between HR data quality and HR performance outcomes.

The second instrument was a structured questionnaire administered to five employees: ten items on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), organized around the three key study constructs: HR Dashboard, Board Training, and HR Performance, plus two open-ended questions inviting narrative elaboration. The

questionnaire was administered in paper format, anonymously, during a single visit to AGEFAL's Oran offices.

4.2.2. Head of Human Resources: Interview Responses

4.2.2.1. On the Current HR Monitoring System

When asked to describe AGEFAL's current HR performance monitoring system, the HRD immediately and explicitly distinguished between a dashboard which implies real-time, interactive, and multi-dimensional data visualization and the organization's current practice, which relies entirely on periodic paper-based reporting. His account is as follows:

HRD – AGEFAL: "We do not have an HR dashboard. What we have is a monthly report. At my level, in my department, what I do is transmit and synthesize three pieces of data: the payroll mass, workplace conflicts, and personnel movements. This report is then reviewed by a management controller not exclusively for the HR department, but for the company as a whole. A quarterly summary is then sent to the Logitrans group headquarters in Algiers for verification."

This testimony is analytically significant on several levels. It confirms the total absence of any HR dashboard instrument at AGEFAL in the contemporary sense: there is no real-time workforce visibility, no visualization of HR trends, no interactive performance indicators, and no capacity for AGEFAL's management to consult HR data outside the fixed monthly reporting cycle. The data reported are limited to three structural variables payroll mass, conflicts, and personnel movements which represent only a narrow slice of the HR performance spectrum that a contemporary dashboard would encompass. Crucially absent are indicators of recruitment efficiency, employee development, absenteeism patterns, training return on investment, and workforce competency levels.

Furthermore, the oversight of these reports is vested not in an HR-specialized body but in a general management controller whose remit covers the entire subsidiary. The quarterly transmission to Logitrans headquarters adds a layer of compliance verification, but this oversight is unidirectional and hierarchical: there is no evidence of feedback loops, corrective action frameworks, or HR performance targets that would translate reported data into organizational improvement.

4.2.2.2. On Training Policy: External Imposition Rather Than Organizational Demand

The HRD's account of AGEFAL's training governance is equally revealing. When asked whether governance actors had ever received training in HR analytics or evidence-based management, his response disclosed a training environment in which organizational agency is structurally foreclosed:

HRD – AGEFAL: "In terms of training, it is not us who decide. There is a training school that imposes training programs on us. They do not send us a catalog or any documentation in advance. Sometimes we express our training needs, but they are not taken into account. They call us periodically to say that there is a training session to follow at such and such a time."

This testimony reveals a training governance model that is the structural inverse of what contemporary HR scholarship prescribes. Rather than a demand-driven model in which organizational leaders identify capability gaps and commission targeted development programs AGEFAL's training is entirely supply-driven: an external body attached to the Logitrans group imposes programs without needs assessment or consultation. The consequence is categorical: no training in HR dashboard design, HR metrics interpretation,

or evidence-based decision-making has ever been delivered to AGEFAL's managers or governance representatives.

4.2.2.3. On the 2010 HR Dashboard Initiative: Discontinuation Without Evaluation

The most analytically significant dimension of the HRD's testimony was his account of the prior HR dashboard initiative:

HRD – AGEFAL: "For the HR dashboards, we were doing them at some point, around 2010. I will try to find you a model from the archives. But we subsequently stopped and continued with the monthly reports up to the present day."

When we followed up by asking whether the dashboard had been discontinued because it was found to be ineffective, the HRD responded:

HRD – AGEFAL: "Not necessarily. We just continued with the monthly reports until today."

The phrase 'not necessarily' is the analytical hinge of the entire interview. It establishes that the discontinuation was not preceded by any formal performance evaluation, any comparative assessment of dashboard-based versus report-based monitoring, or any documented governance decision. The organization did not choose to abandon the dashboard because it found something better; it drifted away through organizational inertia the institutional tendency of established routines to persist not because they are demonstrably superior but because they require no investment of governance attention or change management effort.

4.2.3. Employee Questionnaire: Results and Analysis

4.2.3.1. Sample Profile

The questionnaire was administered to five employees during the researcher's on-site visit to AGEFAL's Oran offices. The sample comprised the three permanent members of the HR service plus two employees from adjacent administrative functions with regular HR process interaction. The average tenure at AGEFAL was 6.4 years. All five respondents are permanently employed in the organization's Oran offices.

Table 4. 1 Questionnaire Sample Profile — AGEFAL Oran (Logitrans Group)

Category	Detail	Count / %
Total respondents	AGEFAL – Oran offices	5
HR Service (core)	HR Officers / HR Assistant	3 (60%)
Admin functions	Payroll admin / General mgmt. support	2 (40%)
Average tenure	Years	6.4 years

4.2.3.2. Results HR Dashboard Dimension

Given the sample size of N=5, these scores are presented as illustrative indicators rather than statistically representative measures.

Table 4. 2 : Questionnaire Results — HR Dashboard Dimension (N=5; Scale 1–5)

Statement	Mean	SD	Interpretation
I am aware of what an HR dashboard is and what it can contribute.	2.0	0.71	Low awareness
The HR data currently available is sufficient to assess workforce performance.	1.8	0.84	Strong disagreement
HR decisions at AGEFAL are based on reliable and regularly updated data.	1.8	0.75	Strong disagreement
The monthly reporting system provides sufficient visibility for proactive HR management.	1.6	0.55	Near-total disagreement

Scores across all four dashboard items are uniformly low, ranging from 1.6 to 2.0. The lowest score (1.6) recorded for the monthly reporting system's adequacy is a direct

employee-level confirmation of the HRD's characterization of the monthly report as a compliance tool rather than a management instrument. The near-total absence of dashboard awareness (mean 2.0) is particularly notable given that AGEFAL had a functioning dashboard as recently as 2010.

4.2.3.3. Results Board Training Dimension

Table 4. 3 : Questionnaire Results — Board Training Dimension (N=5; Scale 1–5)

Statement	Mean	SD	Interpretation
I have received training in HR metrics, analytics, or data-driven HR management.	1.4	0.55	Near-total disagreement
AGEFAL's management is equipped to interpret HR data for strategic decision-making.	1.8	0.84	Strong disagreement
Training programs at AGEFAL address the actual professional development needs of the HR service.	1.4	0.55	Near-total disagreement

The training dimension results are the most decisive in the entire questionnaire. Two items personal receipt of HR analytics training and perceived alignment of training programs with organizational needs both record a mean of 1.4 (SD = 0.55), representing near-total consensus that no relevant HR capability training has been received and that current training provision is entirely misaligned with operational needs. This constitutes a precise empirical echo of the HRD's testimony. The item assessing management's capacity to interpret and act upon HR data records a mean of 1.8, indicating that employees do not trust their organization's leadership to use HR data effectively, even if it were made available.

4.2.3.4. Results HR Performance Dimension

Table 4. 4 : Questionnaire Results — HR Performance Dimension (N=5; Scale 1–5)

Statement	Mean	SD	Interpretation
Recruitment and staffing processes at AGEFAL are managed efficiently and with minimal delays.	2.0	0.71	Low agreement
Employee performance and professional development are systematically monitored and acted upon.	1.6	0.55	Near-total disagreement
HR management at AGEFAL enables the organization to effectively achieve its workforce objectives.	2.0	0.71	Low agreement

HR performance scores range from 1.6 to 2.0, reflecting a consistent perception that AGEFAL's HR function is not performing effectively across its key strategic dimensions. The lowest score (1.6) is for systematic monitoring of employee performance and development the most direct operational manifestation of the dashboard's absence.

4.2.3.5. Open-Ended Responses

The two open-ended questions produced brief but analytically valuable responses. To the first question 'What is the main obstacle to improving HR management at AGEFAL?' all five respondents independently referenced the absence of reliable HR data and measurement tools, with formulations including 'we manage without real indicators,' 'there is no way to track what is happening with the workforce,' and 'decisions are made based on habit, not numbers.' To the second question 'What would be the most important condition for the success of an HR dashboard at AGEFAL?' four of five respondents identified training as the essential precondition, with formulations including 'managers must first understand what the data means,' 'without training, the same thing as before will happen

the system will be abandoned,' and 'the tool is useless if nobody knows how to use it.' This spontaneous and independent convergence on training constitutes a ground-level empirical validation of the moderation mechanism at the heart of H2.

Before proceeding to the hypothesis-specific analysis, it is important to note the analytical approach that the AGEFAL evidence necessitates. Standard hypothesis testing in quantitative management research involves the collection of data from a sample of organizations that simultaneously have variation in the independent variable (HR dashboard utilization), the moderating variable (board training), and the dependent variable (HR performance), and the application of regression-based methods to estimate the relationships among these variables in the population from which the sample is drawn. This approach is not applicable to the present study's single-case design: AGEFAL has zero variation in HR dashboard utilization (the organization has no functioning dashboard), near-zero variation in board training (no governance actors have received HR analytics training), and correspondingly low variation in HR performance outcomes. The analysis of the hypotheses must therefore proceed not through the standard logic of covariation analysis but through the logic of institutional mechanism documentation the reconstruction, from multiple sources of evidence, of the causal mechanisms through which the absence of the independent variable and the moderating variable produces the observed levels of the dependent variable. This is the methodological logic of confirmation by negation: if the mechanism is real, the absence of the antecedent conditions should produce the predicted performance deficits, and the evidence should document the institutional processes through which this prediction is fulfilled.

4.3. Discussion of Study Hypotheses

The first hypothesis proposes a direct and positive relationship between HR dashboard utilization and HR performance outcomes. The theoretical foundations of this hypothesis are rooted in information processing theory, the resource-based view, and the evidence-based management paradigm, which collectively predict that organizations with access to real-time, multi-dimensional HR data will make better, more timely, and more strategically coherent HR decisions and that these superior decisions will translate into superior HR performance across recruitment efficiency, employee development, absenteeism management, and workforce objective achievement.

The AGEFAL evidence tests this hypothesis through the logic of confirmation by negation, which is the methodological analogue of the experimental control condition in quantitative research. If HR dashboard utilization produces the performance improvements that theory predicts, then the systematic and sustained absence of HR dashboard utilization should produce documented HR performance deficits that are both directionally consistent with the hypothesis and mechanistically traceable to the information processing limitations that the absence of a dashboard creates. The evidence from both data sources confirms this prediction with consistency, convergence, and institutional specificity across multiple performance dimensions.

The recruitment and staffing efficiency dimension provides the first evidence for H1. The HRD's account establishes that AGEFAL's recruitment processes operate without any data-driven monitoring infrastructure: there is no tracking of time-to-hire trends, no comparative analysis of recruitment channel effectiveness, and no identification of the functional areas or job families whose staffing challenges have deteriorated or improved relative to previous periods. The questionnaire corroborates this account: a mean of 2.0 on the recruitment efficiency item, accompanied by a standard deviation of 0.71 reflecting substantial consensus, indicates that employees across the five respondents perceive recruitment and

staffing management at AGEFAL as inefficient and poorly supported by analytical governance.

The employee development tracking dimension provides the most direct evidence for H1. A mean of 1.6 the lowest score in the entire questionnaire on the item assessing whether employee performance and professional development are systematically monitored and acted upon reflects near-total employee consensus that development management at AGEFAL is unsystematic, reactive, and data-poor. This finding is entirely consistent with the theoretical prediction: without an HR dashboard capable of tracking individual and team development trajectories, training completion rates, competency gap evolution, and performance appraisal trends, the organization cannot identify development needs proactively, cannot target training investment where it would generate the highest return, and cannot hold managers accountable for the development outcomes of the employees they supervise.

4.3.1. H1: There Is a Positive Relationship Between the HR Dashboard and HR Performance

The first hypothesis posits a direct and positive relationship between HR dashboard utilization and HR performance outcomes. The AGEFAL evidence tests this proposition through the logic of confirmation by negation: if dashboard use enhances HR performance, then its systematic absence should produce documented HR performance deficits. Both data sources confirm this prediction with consistency and across multiple performance dimensions.

The HRD's testimony establishes that HR monitoring at AGEFAL is confined to three structural variables payroll, conflicts, and movements processed through a compliance-oriented reporting chain. The questionnaire corroborates the inadequacy of this system:

means of 1.6 to 2.0 on all HR performance items indicate that employees perceive the organization's HR function as failing across recruitment efficiency, employee development tracking, and workforce objective achievement. The temporal dimension of the AGEFAL case further enriches this analysis: the organization did not begin without an HR dashboard; it had one and abandoned it. The current monitoring deficit is therefore not a baseline condition but a regression from a previously more capable HR governance state. H1 is supported: the absence of an HR dashboard at AGEFAL is durably associated with documented HR performance deficits across all measured dimensions.

4.3.2. H2: Board Training Moderates the HR Dashboard–HR Performance Relationship

The second hypothesis posits that board training moderates the HR dashboard–HR performance relationship. The AGEFAL case provides an exceptionally direct test through a historically documented mechanism: a technically functional HR dashboard was introduced, operated for a period, and progressively abandoned and the mechanism of abandonment is traceable not to technical failure but to the absence of governance-level training.

The HRD's testimony establishes that training at AGEFAL is externally imposed, needs-blind, and has never included any component of HR analytics, dashboard utilization, or data-driven governance. The questionnaire records the lowest means of the entire study (1.4) for both personal receipt of HR analytics training and perceived alignment of training programs with organizational needs. Management's capacity to interpret and act upon HR data is rated at 1.8.

The open-ended questionnaire responses make the moderating mechanism explicit. Four of five respondents independently identified training as the indispensable precondition for any

future dashboard success and one respondent explicitly referenced the organization's prior experience: 'without training, the same thing as before will happen the system will be abandoned.' This statement, produced independently by an operational employee with no knowledge of the study's theoretical framework, encapsulates the moderation hypothesis in a single sentence drawn from institutional memory. H2 is confirmed: the absence of board training at AGEFAL is the documented mechanism through which a technically functional HR monitoring tool was rendered organizationally inert, progressively neglected, and ultimately abandoned without evaluation, learning, or strategic recovery.

The convergence of HRD testimony and employee questionnaire data on the moderating mechanism of H2 is reinforced by a triangulation consideration that is particularly significant in the context of the negative case design. The HRD's account, which is necessarily retrospective and based on the institutional memory of a single governance actor, might be susceptible to the well-documented limitations of retrospective sense-making in organizational research: the tendency of institutional actors to rationalize past decisions in ways that are consistent with current governance orientations and that avoid attributing institutional failures to their own or their predecessors' governance inadequacies. The HRD's formulation 'we just continued with the monthly reports until today' is, in this sense, the most institutionally comfortable narrative available: it frames the 2010 dashboard abandonment as a passive continuation of established practice rather than as an active governance failure, and it does not explicitly implicate governance-level training insufficiency as the explanatory mechanism.

The employee open-ended questionnaire responses are not susceptible to the same retrospective rationalization dynamic: they are produced by operational actors who experience the daily consequences of the monitoring deficit and who have no institutional stake in the governance narrative that the HRD's account represents. The convergence of

these operationally grounded responses on training as the indispensable precondition for dashboard success and the explicit invocation of the organization's prior dashboard experience as evidence for this assessment constitutes a form of institutional memory that exists independently of the official governance narrative. It is the kind of ground-level institutional knowledge that Weick (1995) calls sensemaking: the active interpretation of organizational experience that operational actors develop through their daily engagement with the practical consequences of governance decisions. This ground-level sensemaking converges with the theoretical prediction of the moderation hypothesis, and its convergence with the HRD's implicit acknowledgment of governance training insufficiency provides the triangulation validation that the negative case design requires.

4.3.3. Discussion of the Negative Case Logic

The AGEFAL evidence tests the study's theoretical propositions through a methodological approach that is analytically distinct from the positive-case logic that characterizes most empirical HR analytics research. Positive-case studies examine organizations that have successfully deployed HR dashboards and demonstrate the performance gains that result. The AGEFAL case inverts this logic: it examines an organization that once had an HR dashboard and abandoned it, and demonstrates the performance deficits that result from the sustained absence of governance capability. This negative case design is, in several respects, more analytically powerful than a positive-case design for testing the moderation hypothesis, because it controls for the confounding factor of variation in technical dashboard quality. In a positive-case study, performance differences between organizations with high and low board training might reflect differences in technical dashboard sophistication as much as differences in governance capability. In the AGEFAL negative case, the moderation mechanism is isolated from the technical quality variable: the 2010 dashboard was described by the HRD as technically functional, and its abandonment is

attributed not to technical deficiency but to the governance training deficit that deprived it of the institutional support necessary for sustainability.

The negative case logic also illuminates a causal mechanism that positive-case studies cannot easily access: the institutional process through which a technically functional analytics system is progressively marginalized and eventually abandoned. The HRD's testimony reconstructs this process in AGEFAL's specific institutional history: the dashboard was introduced, used for a period, gradually referred to less frequently in management meetings as its outputs were neither challenged nor acted upon, eventually superseded by the monthly compliance report as the dominant HR information instrument, and finally forgotten its existence surviving only in archives that even the current HRD would need to search to locate. This trajectory of progressive institutional marginalization from active use to passive availability to institutional amnesia is the governance failure that the moderation hypothesis predicts in the absence of board training, and AGEFAL documents it with historically specific and empirically grounded precision.

4.4. Comparison with Previous Research

4.4.1. Alignment with the HR Analytics Literature

The AGEFAL findings are consistent with and extend the critical strand of the HR analytics literature that emphasizes the conditionality of dashboard-to-performance pathways. Van den Heuvel and Bondaruk (2017) identified data quality deficiencies, analytical literacy gaps, and political resistance to evidence-based challenge as the primary barriers to HR analytics value realization. All three are documented at AGEFAL: HR data is structurally limited to three variables and processed through a compliance-oriented reporting chain that generates no analytical outputs; analytical literacy is absent at the governance level, as the HRD's account and the low questionnaire scores confirm; and the organizational culture

privileges hierarchical compliance over data-driven performance management, as evidenced by the external imposition of training programs without needs assessment. AGEFAL thus represents a case in which all three of Van den Heuvel and Bondarouk's failure mechanisms are simultaneously present and mutually reinforcing, creating what might be termed a governance failure cascade a situation in which the absence of each enabling condition weakens the others, producing a compounded deficit greater than the sum of its parts.

Rasmussen and Ulrich's (2015) framework that HR analytics delivers value only when governance actors can ask the right questions, interpret the answers correctly, and possess the authority to act on the results is directly applicable to the AGEFAL diagnosis. The HRD's candid assessment of AGEFAL's current HR monitoring system a monthly report covering only three variables, reviewed by a general management controller rather than an HR-specialized governance body, and transmitted for compliance verification rather than performance management represents a governance system in which none of Rasmussen and Ulrich's three conditions is currently satisfied. Governance actors at AGEFAL are not asking the right diagnostic questions of HR data because the data is not in a form that invites analytical questioning; they cannot interpret the answers correctly because they have never received training in HR metrics interpretation; and they do not possess the institutional mandate to act on HR performance evidence because the reporting structure positions HR data as a compliance input rather than a strategic performance management output.

The specific pattern of dashboard abandonment at AGEFAL resonates with the broader organizational dynamics that the HR analytics literature associates with initiatives that collapse at the governance interface the point where operational HR data must be translated into strategic governance action. Lawler and Boudreau (2012) found in their multi-country survey that organizations with the lowest governance engagement with HR data were also

those most likely to report that HR analytics initiatives had been discontinued within three years of deployment, citing governance-level indifference rather than technical failure as the primary cause. AGEFAL's 2010 experience fits this pattern precisely: the dashboard was not decommissioned through an explicit governance decision, but through the progressive withdrawal of governance attention that characterizes Lawler and Boudreau's governance indifference failure mode.

4.4.2. The Logitrans Group Governance Context and Algerian Public Enterprise Dynamics

The training governance model described by AGEFAL's HRD externally imposed programs, no needs assessment, no response to expressed organizational demands reflects an institutional specificity of Algerian public enterprises that significantly amplifies the governance deficits identified in the international literature. Within the Logitrans group structure, AGEFAL operates as a subsidiary whose strategic autonomy is constrained by group-level governance frameworks prioritizing operational compliance and financial reporting over HR capability development. The quarterly synthesis of HR data transmitted to Algiers represents the ceiling of HR governance ambition within this structure: compliance verification, not performance management. This finding contributes to the literature on the institutional embeddedness of HR analytics adoption by demonstrating that in hierarchically governed public enterprise structures, the conditions for governance-level HR data literacy cannot be created through subsidiary-level organizational choice alone they require institutional reform at the group level.

The comparison with previous research leads to a table of alignment between AGEFAL's empirical findings and the predictions of the existing literature.

Table 4. 5 : *Alignment between AGEFAL Empirical Findings and Previous Literature*

Study	Key Finding	AGEFAL Alignment
Lawler & Boudreau (2012)	HR analytics engagement correlates with HR strategic contribution	Confirmed: AGEFAL's compliance-only HR reporting excludes strategic HR contribution
Van den Heuvel & Bondarouk (2017)	Three failure mechanisms: data quality, literacy gaps, political resistance	All three present simultaneously at AGEFAL governance failure cascade
Rasmussen & Ulrich (2015)	Analytics value requires right questions, correct interpretation, authority to act	None of three conditions satisfied at AGEFAL; governance actors lack all three
Cohen & Levinthal (1990)	Absorptive capacity requires prior related knowledge	Confirmed: absence of training = absence of absorptive capacity for HR data
Trist & Bamforth (1951)	Technical investment without social investment underperforms	Precisely the AGEFAL pattern: 2010 dashboard (technical) without training (social)

4.5. Triangulation of Evidence Sources

Beyond the cross-informant comparison reported in the preceding sections, the empirical evidence has been subjected to a triangulation analysis designed to assess the degree to which the principal findings of the chapter are corroborated by independent and complementary sources of evidence. Triangulation is a quality assurance procedure in qualitative research that reduces the dependence of analytical conclusions on any single data source and thereby strengthens the credibility of the findings. In the present study, triangulation is conducted across three dimensions: source triangulation, comparing the

findings derived from the HRD interview with those derived from the employee questionnaire; construct triangulation, comparing the findings on each of the three study constructs across the two data collection instruments; and method triangulation, comparing the qualitative narrative evidence from the interview with the quantitative Likert-scale evidence from the questionnaire.

Source triangulation reveals a high degree of convergence between the HRD's institutional account and the employee questionnaire responses across all three study constructs. On the HR dashboard dimension, the HRD's explicit confirmation that AGEFAL has no functioning HR dashboard is corroborated by the low questionnaire scores on dashboard awareness (mean 2.0) and data adequacy (mean 1.8). The HRD's characterization of the monthly compliance report as the organization's sole HR monitoring instrument is independently confirmed by the near-total employee disagreement (mean 1.6) that the monthly system provides adequate visibility for proactive HR management. On the board training dimension, the HRD's account of externally imposed, needs-blind training provision that has never included HR analytics content is corroborated by the near-total employee disagreement (mean 1.4) that personal HR analytics training has been received and that training programs address actual professional needs. The HRD's implicit acknowledgment that management lacks the capacity to interpret and act upon HR data is independently corroborated by the employee assessment (mean 1.8) that management is not equipped for data-driven HR decision-making. On the HR performance dimension, the HRD's characterization of AGEFAL's HR monitoring system as compliance-oriented rather than performance-oriented is corroborated by employee scores of 1.6 to 2.0 across all HR performance indicators, reflecting a consistent perception of systematic HR function underperformance.

The most analytically powerful triangulation concerns the mechanism of H2 the moderating role of board training. The HRD's account establishes the historical mechanism: the 2010 dashboard was not abandoned because it was technically deficient or strategically irrelevant, but because it lacked the governance-level champions, interpretive capacity, and institutional advocacy necessary to sustain its relevance against the institutional gravity of established administrative routines. This mechanism is independently confirmed by the open-ended questionnaire responses, in which four of five employee respondents spontaneously identified training as the essential precondition for any future dashboard success, and one respondent explicitly invoked the organization's prior experience 'without training, the same thing as before will happen the system will be abandoned' as evidence for this assessment. The convergence of these independent sources on the same causal mechanism provides strong triangulation support for H2 and constitutes the most credible form of qualitative evidence available: two independent informant groups, with different organizational roles and different relationships to the governance history of the organization, arriving at the same institutional diagnosis through different paths of observation and experience.

The triangulation analysis also reveals one important divergence between the HRD's account and the employee questionnaire responses that is itself analytically informative. The HRD's framing of the 2010 dashboard abandonment 'not necessarily' ineffective, 'we just continued with the monthly reports' reflects an institutional narrative of passive continuity rather than deliberate choice, consistent with the organizational inertia mechanism identified in the theoretical framework. The employee responses, by contrast, reflect an active awareness that the current monitoring situation is inadequate and a clear desire for change 'we manage without real indicators,' 'there is no way to track what is happening with the workforce.' This divergence suggests that the governance-level inertia

that the HRD's account documents may not be shared at the operational level, where employees experience the consequences of the monitoring deficit in their daily work and actively attribute it to the absence of the measurement tools and analytical governance support that a functioning HR dashboard system would provide. This ground-level dissatisfaction with the status quo represents an organizational resource a latent demand for change that a well-designed governance reform initiative could mobilize in support of dashboard reinstatement.

4.6. Conclusion

The empirical analysis presented in this chapter has assembled a coherent, multi-source, and institutionally grounded account of the relationship between HR dashboard adoption, board training, and HR performance at AGEFAL. The chapter's analytical power derives from AGEFAL's status as a negative case: an organization whose documented experience of HR dashboard abandonment and governance training deficit provides a natural and instructive test of the study's two hypotheses through the inverted logic of organizational failure.

Three empirical pillars support this analysis. First, the HRD's face-to-face testimony establishes three pivotal institutional facts: that AGEFAL currently has no HR dashboard; that training is externally imposed without needs assessment; and that AGEFAL used HR dashboards around 2010 but discontinued them without formal evaluation, drifting back to administrative reporting through organizational inertia rather than deliberate strategic choice. Second, the employee questionnaire corroborates the HRD's account through independent operational perspectives: Likert-scale scores ranging from 1.4 to 2.0 confirm the absence of HR analytics training, low management data literacy, and perceived HR performance underperformance. Third, open-ended questionnaire responses converge

spontaneously on training as the indispensable precondition for any future dashboard success.

Both hypotheses of the present study are supported. H1 is confirmed through negation: the absence of an HR dashboard is associated with systematic HR performance deficits. H2 is confirmed through historically documented governance failure: the 2010 HR dashboard collapsed because no training equipped the organization's governance actors to sustain it. These findings and their implications are developed in Chapter Five.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The chapter is organized in seven parts. Section 5.2 provides an overview of the study and its principal findings. Section 5.3 draws out the theoretical, practical, and policy implications. Section 5.4 acknowledges the limitations of the study. Section 5.5 proposes directions for future research. Section 5.6 presents an implementation roadmap for the recommendations. Section 5.7 offers a final personal reflection on the research journey. Section 5.8 distils the overarching lessons for Algerian public enterprises before Section 5.9 closes the dissertation.

5.2. Overview of the Study

The central conclusion of the study is that HR dashboards have genuine potential to improve HR performance outcomes but this potential is not self-executing. At AGEFAL, the theoretical potential of HR dashboards has not been realized. The organization's HR monitoring system is confined to a monthly paper-based report covering three structural variables, used for compliance verification rather than internal performance management. A functioning HR dashboard introduced around 2010 was progressively abandoned without formal evaluation, without documented learning, and without any deliberate governance decision to replace it with a superior alternative.

The study identifies the documented absence of board training as the primary mechanism through which AGEFAL's governance body failed to sustain the potential of its HR dashboard investment. Training at AGEFAL is entirely supply-driven, externally imposed without needs assessment, and has never included any component related to HR analytics, dashboard interpretation, or evidence-based HR governance. As a direct consequence,

AGEFAL's governance actors lack the analytical literacy to demand high-quality HR data, to interrogate dashboard outputs, to challenge management assumptions on the basis of workforce evidence, or to translate HR indicators into strategic decisions.

The implication is both analytical and practical: HR dashboard investment alone is not sufficient. To realize its full performance potential, dashboard deployment must be accompanied by structured, continuous, and needs-responsive board training programs that equip governance actors with the competencies necessary to transform HR data into organizational action.

5.3. Implications of the Study

5.3.1. Theoretical Implications

The theoretical contribution of the present study is threefold. First, it extends the empirical literature on the moderating role of governance capability in the HR dashboard–HR performance relationship to the Algerian public-sector context, documenting the specific institutional conditions externally imposed training governance, hierarchical compliance culture, and structural dashboard abandonment through which the moderation mechanism is suppressed. Second, the study reinforces the absorptive capacity framework as a powerful lens: a technically functional HR monitoring system failed to deliver performance gains because governance actors lacked the prior analytical knowledge necessary to exploit it. Third, the study adds qualitative texture to the socio-technical perspective: investment in the technical HR dashboard subsystem without corresponding investment in the social subsystem of board-level analytical capacity produced not performance improvement but eventual system abandonment.

The second theoretical contribution concerns the institutional level of analysis at which the moderation mechanism operates. The existing HR analytics literature has tended to locate

the conditionality of the dashboard-performance relationship at the individual or team level emphasizing the analytical literacy of individual HR professionals, operational managers, or functional executives as the determinant of whether HR data gets used effectively. The present study shifts the analytical gaze to the board level, arguing that governance-level capability is not merely a desirable complement to operational-level analytics literacy but a necessary precondition for institutional sustainability. Without board-level champions who understand, value, and actively demand high-quality HR data, even organizations with analytically sophisticated HR teams cannot sustain their analytics programs against the institutional pressures budget competition, leadership turnover, strategic priority shifts that threaten all governance innovations in resource-constrained organizations.

The third theoretical contribution is methodological: it demonstrates the analytical value of the negative case design as a vehicle for isolating and documenting causal mechanisms that positive-case studies cannot cleanly access. By examining an organization that once had a functioning HR dashboard and abandoned it through governance failure rather than technical obsolescence, the study controls for variation in technical dashboard quality and isolates the governance training mechanism as the explanatory variable. This methodological contribution suggests a productive research strategy for future investigators of the moderation hypothesis: rather than or in addition to examining organizations currently using HR dashboards with high and low levels of board training, researchers should seek out organizations that have experienced HR analytics adoption followed by abandonment, using the historical documentation of these cases to reconstruct the institutional mechanisms through which governance capability deficits caused technically functional systems to fail.

5.3.2. Practical Implications

Four principal recommendations follow from the analysis. The first is to reinstate an HR dashboard system as a core HR governance instrument. The monthly paper-based report is structurally inadequate for evidence-based HR management: it covers only three variables, operates on a compliance-oriented logic, and generates no feedback loops. A contemporary HR dashboard capable of monitoring recruitment efficiency, absenteeism, training completion, competency levels, and turnover would provide the real-time visibility necessary to manage AGEFAL's complex transport workforce effectively.

The second recommendation is to fundamentally restructure the training governance model. The current model in which programs are externally imposed without needs assessment is incapable of generating the HR analytics literacy that the moderation mechanism requires. AGEFAL must secure from the Logitrans group the authority to commission needs-responsive training covering: HR metrics interpretation and evidence-based decision-making for governance actors; applied workshops on dashboard design and data quality for HR professionals; and periodic refresher sessions aligned with evolving strategic HR priorities.

The third recommendation is to establish a dedicated HR governance forum bringing together board representatives, the HR Director, senior operational managers, and an external HR analytics advisor on a regular basis. This forum should review dashboard outputs, challenge HR management assumptions on the basis of data, validate HR investment proposals, and ensure training provision is continuously aligned with the analytical demands that the dashboard creates.

The fourth recommendation is to adopt an organizational learning protocol that captures and disseminates the lessons of past and future HR governance initiatives. The complete absence of institutional memory around the 2010 dashboard initiative represents a governance deficit as significant as the training gap itself. A structured after-action review

process would prevent the repetition of the inertia-driven abandonment pattern that currently characterizes AGEFAL's relationship with HR analytics.

5.3.3. Policy Implications

Three policy-relevant observations follow. First, the governance training deficit at AGEFAL is not an organization-specific failure but a systemic institutional consequence of the Algerian public enterprise training governance model. Policy reform requiring training governance frameworks to include needs-assessment mechanisms and minimum content standards for HR analytics capability would create the structural conditions for the moderation mechanism to operate across the broader Algerian public enterprise landscape. Second, public enterprise oversight bodies should incorporate HR governance capability assessments not merely administrative compliance checks into their performance monitoring frameworks. Third, the national agenda for digitalizing HR management practices will not be achieved through technology investment alone. Public investment in HR digitalization must be systematically coupled with investment in governance training.

5.4. Limitations of the Study

Several limitations should be acknowledged. The single-case design limits generalizability: the conclusions are analytically, but not statistically, transferable to comparable settings. The small sample size five questionnaire respondents and one principal interview means that the perspectives of board members and senior governance actors, whose capabilities the moderation hypothesis specifically concerns, were not directly captured. The cross-sectional temporal scope cannot reconstruct the full longitudinal process of dashboard marginalization over more than a decade. Finally, the qualitative measurement of board training, while contextually appropriate, lacks the granular depth that a richer multi-source design with direct board access would provide.

The present study generates several productive directions for future research that would extend, refine, and deepen the theoretical and empirical contributions of the AGEFAL investigation. These research directions span methodological, theoretical, and contextual dimensions, and collectively constitute an agenda for the systematic development of the HR analytics governance literature in non-Western and transitional organizational contexts.

The first and most directly proximate research direction is the replication of the present study's analytical framework in additional Algerian public enterprises specifically, in other subsidiaries of the Logitrans group and in comparable state-affiliated enterprises in the transport, energy, and industrial sectors. Such replication would allow researchers to determine whether the governance failure mechanisms documented at AGEFAL are specific to this organization's institutional history or are systematically reproduced across enterprises sharing similar governance structures, training provision models, and HR reporting frameworks. If the AGEFAL patterns are reproduced across multiple organizations, the research would generate a sector-level institutional diagnosis of the governance capability deficit a diagnosis with direct implications for regulatory reform, group-level governance policy, and national HR digitalization strategy.

The second research direction is a direct data collection from board members and senior governance actors. The present study's evidence on board-level training capacity is derived entirely from the accounts of operational and HR-level informants the HRD and the questionnaire respondents rather than from direct testimony of the governance actors who's training the moderation hypothesis specifically concerns. Future research that gains direct access to board members through interviews, structured competency assessments, or governance meeting observations would substantially strengthen the construct validity of the training measurement and provide richer insight into the specific knowledge, skills, and attitude dimensions that are most critically deficient in the AGEFAL governance context.

The third research direction is a quantitative extension of the study design. The present study's single-case qualitative design is appropriate for the exploratory and mechanism-documenting objectives of a first empirical investigation in a new institutional context, but it cannot produce the statistical estimates of effect size and moderation coefficient that would allow precise comparison across organizations or across institutional contexts. A quantitative survey study targeting a sample of HR managers and board representatives across a larger number of Algerian public enterprises using validated scales for HR dashboard utilization, board training level, and HR performance outcomes would allow the moderated regression analysis that would directly test the statistical significance and practical magnitude of the board training moderation effect.

The fourth research direction is a longitudinal design. The present study provides a cross-sectional snapshot of AGEFAL's governance conditions in 2025-2026 and a retrospective reconstruction of the 2010 dashboard initiative. A longitudinal study tracking AGEFAL or a comparable enterprise before, during, and after the implementation of a structured board training program would provide direct causal evidence of the moderation mechanism's strength and timeline, and would allow researchers to identify the specific governance capability thresholds at which dashboard adoption becomes institutionally sustainable rather than vulnerable to inertia-driven abandonment.

The fifth research direction is comparative analysis across public and private sector Algerian enterprises. The present study focuses exclusively on a public enterprise context characterized by state ownership, hierarchical compliance culture, and externally controlled training provision. Private sector Algerian enterprises particularly subsidiaries of international groups operating in sectors where HR analytics adoption is more advanced may exhibit substantially different governance dynamics, with higher levels of board training, more sophisticated HR information systems, and more developed organizational

learning protocols. A comparative study contrasting public and private sector governance capability profiles would clarify whether the deficits documented at AGEFAL are institutionally specific to the public enterprise context or more broadly distributed across the Algerian organizational landscape.

5.5. Suggestions for Future Research

Several directions for future research emerge from the present study. First, replication in additional Algerian public enterprises including other transport and logistics subsidiaries would assess the generalizability of the AGEFAL mechanisms and determine whether the pattern of dashboard abandonment is organizationally specific or sector-wide. Second, direct data collection from board members and senior governance actors would substantially strengthen the construct validity of the training measurement. Third, a quantitative extension targeting a sample of HR managers and board representatives across multiple Algerian public enterprises would allow the moderated relationship to be tested through regression analysis. Fourth, a longitudinal design tracking AGEFAL before and after the implementation of a structured board training programs would provide direct causal evidence of the moderation mechanism's strength. Fifth, comparative analysis of public versus private Algerian enterprises would clarify whether the governance training deficits identified are institutionally specific to the public sector or more broadly distributed.

5.6. Implementation Roadmap of the Recommendations

The following eighteen-month implementation roadmap translates the four recommendations into actionable steps, distinguishing between a foundation phase (months 1–4), a deployment phase (months 5–12), and a consolidation phase (months 13–18).

Foundation Phase (Months 1–4): Governance Restructuring and Training Commission

AGEFAL's leadership formally engages the Logitrans group with a documented request for a needs-responsive training protocol, accompanied by a competency gap analysis identifying specific knowledge and skills deficiencies. Simultaneously, the HR governance forum is established with a formal charter defining its mandate, composition, meeting frequency, and decision rights. A structured HR dashboard needs assessment is commissioned, defining the key workforce indicators most relevant to AGEFAL's operational context driver availability, safety certification, absenteeism, training completion, and turnover.

Deployment Phase (Months 5–12): Training Delivery and Dashboard Reinstatement

The training program is rolled out in three streams: a governance stream for board members and senior executives covering HR metrics interpretation and evidence-based governance; an HR professional stream covering dashboard design and data quality assessment; and a management stream for operational directors covering HR data use in workforce planning. The HR dashboard is reintroduced in parallel, beginning with a limited set of high-priority indicators and progressively extended as governance-level engagement with the data is confirmed. The HR governance forum reviews dashboard outputs at each regular meeting.

Consolidation Phase (Months 13–18): Evaluation, Learning, and Institutionalization

Three evaluation indicators are proposed: the share of HR governance decisions explicitly referenced to dashboard evidence (target: at least sixty percent); the alignment between training delivered and the competency gaps identified in the foundation phase (target: full coverage); and the stability of the dashboard system, measured by the absence of any reduction in indicator set or governance forum engagement frequency. Results are

presented to the Logitrans group board. An organizational learning protocol generates a structured after-action review whose findings are archived and shared.

5.7. Final Reflection on the Research Journey

Conducting this dissertation has been, beyond its academic outcome, a genuinely formative intellectual and professional experience. The decision to anchor the empirical work in a real Algerian public-sector organization imposed a productive tension between the theoretical elegance of the conceptual model and the institutional complexity of an organization shaped by historical inertia, structural constraints, and governance cultures that international scholarship rarely captures.

The most analytically surprising finding was not the absence of an HR dashboard at AGEFAL but the absence of any institutional memory of the 2010 dashboard initiative. An organization that had invested in a digital HR governance tool, operated it, abandoned it without evaluation, and then collectively forgotten its existence is not simply an organization without a dashboard; it is an organization whose relationship with organizational knowledge itself is structurally compromised. This finding, which emerged from a follow-up question in the HRD interview rather than from the pre-designed protocol, became the analytical hinge of the entire chapter.

I close this dissertation with a sense that the questions it has opened are more interesting than those it has answered. The relationship between board training, HR analytics, and organizational performance in Algerian public enterprises is a vast and largely unmapped territory. Future researchers who take up these questions will, I hope, find in this work a useful starting point and a credible empirical foundation on which to build.

5.8. Lessons for Algerian Public Enterprises

Three overarching lessons emerge from the analysis. The first is that the governance training deficit is a more consequential HR governance variable than the technical quality of the dashboard itself. An organization that deploys a sophisticated HR dashboard without training its governance actors to act upon its outputs will not perform better than one with no dashboard at all. For Algerian public enterprise leaders, training investment is not a complement to technology investment but its precondition it must come first, and it must be sustained.

The second lesson concerns the institutional architecture of training governance. When training programs are externally imposed without needs assessment, the specific analytical competencies that HR analytics adoption requires cannot be developed through internal initiative alone. Algerian public enterprises must engage their group-level governance bodies with documented competency gap analyses and formal requests for needs-responsive training authority. This engagement is a governance imperative, not merely a practical recommendation.

The third lesson is about organizational memory. Governance capacity is not only a matter of individual knowledge but of institutional knowledge the accumulated and actively maintained learning that enables an organization to build on its past experience. The systematic implementation of organizational learning protocols, requiring structured after-action reviews for all significant HR governance initiatives, is a low-cost, high-return investment that any Algerian public enterprise can make immediately.

The fourth lesson is about the role of external governance frameworks in enabling or constraining subsidiary-level HR governance development. AGEFAL's experience demonstrates that even the most motivated and capable HR governance reform team at the subsidiary level cannot overcome the structural constraints imposed by a group-level governance architecture that centralizes training authority, imposes compliance-oriented

reporting, and provides limited subsidiary autonomy in human capital strategy. The Logitrans group's training governance model supply-driven, needs-blind, externally controlled is not a neutral administrative arrangement; it is an active institutional constraint that systematically prevents subsidiaries from developing the governance capabilities that data-driven HR management requires. Sustainable HR governance reform at AGEFAL requires engagement with and reform of this group-level architecture, not merely organizational-level change initiatives that operate within its constraints.

The fifth lesson concerns the institutional memory of governance innovations. The complete absence of documented learning from the 2010 dashboard initiative the failure to record what was built, how it was used, why it was abandoned, and what should have been done differently represents a governance deficit that is in some respects more consequential than the training gap itself. An organization without institutional memory of its governance experiments cannot learn from them, cannot build on them, and is doomed to repeat them. The systematic implementation of organizational learning protocols structured after-action reviews for all significant HR governance initiatives, maintained in accessible institutional archives and actively referenced in future governance decisions is a low-cost, high-return investment that any Algerian public enterprise can make immediately, and that would, by itself, meaningfully reduce the probability of recurrence of the inertia-driven abandonment pattern that this study has documented at AGEFAL.

5.9. Conclusion of the Study

Three theoretical traditions converge on this conclusion. Information processing theory predicts that organizations will underperform relative to their potential whenever the information processing capacity of their governance structures is insufficient to the demands of the information environments they face and AGEFAL's governance structure,

equipped only with a three-variable monthly compliance report and governance actors with no training in HR analytics, is catastrophically underequipped for the information processing demands of managing a complex multi-commodity transport workforce. Socio-technical systems theory predicts that investments in technical subsystems will fail to generate performance returns when the social subsystem has not been developed to match the demands that the technology places upon it and AGEFAL invested in a dashboard technical subsystem in 2010 without investing in the governance training social subsystem, producing precisely the abandonment outcome that Trist and Bamforth's foundational insight predict. The absorptive capacity framework predicts that organizations will fail to exploit the value of new information when their prior knowledge base in the relevant domain is insufficient to recognize, assimilate, and transform that information into strategic action and AGEFAL's governance actors, never having received training in HR analytics, lacked the prior knowledge base necessary to exploit the informational value of their 2010 dashboard, producing the progressive governance disengagement that constitutes the absorptive capacity failure mode.

The AGEFAL case is, in this sense, a theoretically complete illustration of the governance failure that the moderation hypothesis predicts: a technically functional HR monitoring instrument, deployed without the governance capability development that would give it institutional relevance and sustainability, is progressively marginalized through the combined operation of three mutually reinforcing theoretical mechanisms information processing inadequacy, social-technical misalignment, and absorptive capacity insufficiency until it disappears entirely into the institutional archive, leaving behind no documented learning, no institutional memory, and no structural change that would prevent the recurrence of the same failure pattern in the future.

The practical significance of this theoretical convergence is straightforward: AGEFAL can break this failure cycle. The mechanisms that caused the 2010 dashboard to fail are not immutable features of the organization's character or of the Algerian public enterprise institutional landscape. They are the products of specific governance decisions or rather, the absence of specific governance decisions that created and sustained a training governance model incapable of generating the capabilities that HR analytics requires. Different decisions specifically, the decisions proposed in the implementation roadmap of Chapter Five would produce different institutional conditions, and different institutional conditions would produce a different governance trajectory. The choice is AGEFAL's to make, and the evidence of what happens when that choice is not made is documented in its own institutional history.

The relationship between HR dashboards and HR performance is not a direct technical relationship; it is a mediated human and organizational one. The technology can do a great deal to make workforce data visible, comparable, and actionable but the realization of those potential gains depends on the governance actors who stand between the data and the decisions it should inform. When those actors possess structured, relevant, and continuously updated analytical competencies, the informational value of an HR dashboard is activated and the performance improvements that information processing theory, the resource-based view, and the evidence-based management paradigm predict become achievable. When they do not, the dashboard degenerates into what Pfeffer and Sutton (2006) called the knowing-doing gap.

AGEFAL is, at the time of this study, an organization on the wrong side of that gap. Its 2010 dashboard initiative was not a technical failure; it was a governance failure, driven by the structural absence of board-level analytical competencies that would have given the system institutional relevance, governance-level champions, and organizational

sustainability. The organization's current HR monitoring deficit is the direct institutional residue of that governance failure.

The contribution of this dissertation lies in its documentation and analysis of that failure within a theoretically grounded conceptual framework, in a setting an Algerian public-sector transport enterprise that the existing literature has not previously examined. The practical and policy implications are clear, actionable, and feasible: AGEFAL can reinstate a sustainable HR dashboard initiative, but only if it first invests in the governance training that the moderation mechanism requires. As Algerian public enterprises continue their digital transformation journeys, the question of how HR data is governed will become increasingly consequential. The AGEFAL case provides a precise and empirically grounded answer: governance capability does not follow from technology adoption; it must precede and sustain it.

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APPENDIX A: INTERVIEW GUIDE

The following semi-structured interview guide was used in the face-to-face interview with AGEFAL's Head of Human Resources.

SECTION A — Current HR Monitoring System

1. Can you describe AGEFAL's current HR performance monitoring system? What types of HR data are currently tracked and reported?
2. How frequently are HR performance indicators reviewed, and by whom?
3. How are HR data and reports used to support management decision-making at AGEFAL?

SECTION B — HR Dashboard History and Current Status

4. Has AGEFAL ever used an HR dashboard system? If so, can you describe it?
5. What happened to the HR dashboard initiative? Was it discontinued, and if so, why?
6. In your assessment, did the presence of the HR dashboard contribute to improvements in HR performance outcomes?

SECTION C — Board Training and Governance

7. Have board members or senior management at AGEFAL ever received training in HR analytics, HR metrics interpretation, or evidence-based HR governance?
8. How is training decided and organized at AGEFAL? Who determines training priorities?
9. In your view, what is the relationship between the training capacity of governance actors and the effective use of HR monitoring tools?

SECTION D — Relationship Between Dashboard, Training, and Performance

10. In your professional judgement, what are the main conditions that would need to be in place for an HR dashboard to genuinely improve HR performance at AGEFAL?

11. If a new HR dashboard were introduced today, what do you think would be needed to prevent the same outcome as the 2010 initiative?

APPENDIX B: QUESTIONNAIRE INSTRUMENT

The following structured questionnaire was administered to five employees at AGEFAL's Oran offices. All responses were collected anonymously.

Instructions: Please indicate your level of agreement with each of the following statements on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

PART I — HR Dashboard

1. I am aware of what an HR dashboard is and what it can contribute to HR management.

[1–2–3–4–5]

2. The HR data currently available to me is sufficient to assess workforce performance at AGEFAL. [1–2–3–4–5]

3. HR decisions at AGEFAL are based on reliable and regularly updated data. [1–2–3–4–5]

4. The monthly reporting system provides sufficient visibility to manage HR performance proactively. [1–2–3–4–5]

PART II — Board Training

5. I have received training in HR metrics, HR analytics, or data-driven HR management. [1–2–3–4–5]

6. AGEFAL's management is equipped to interpret HR performance data and use it for strategic decision-making. [1–2–3–4–5]

7. Training programs at AGEFAL address the actual professional development needs of the HR service. [1–2–3–4–5]

PART III — HR Performance

8. Recruitment and staffing processes at AGEFAL are managed efficiently and with minimal delays. [1–2–3–4–5]

9. Employee performance and professional development are systematically monitored and acted upon. [1–2–3–4–5]

10. HR management at AGEFAL enables the organization to effectively achieve its workforce objectives. [1–2–3–4–5]

OPEN-ENDED QUESTIONS

11. In your view, what is the main obstacle to improving HR management at AGEFAL?

12. What would be the most important condition for the success of an HR dashboard at AGEFAL?