

Artificial Intelligence for Green Financial Decision-Making: A Conceptual Model of Sustainable Performance in Moroccan Firms

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Abstract

Digital transformation and the environmental transition are reshaping how firms allocate resources, evaluate risks, and pursue sustainable value creation. This conceptual study examines how organizational artificial intelligence (AI) capability may contribute to sustainable performance through a sequence of decision-making, financial, and environmental mechanisms, with Moroccan firms considered as a priority context for future application. The study adopts a theoretical, non-empirical design based on a critical and integrative review of literature spanning AI capability, organizational decision-making, green finance, green investment, and sustainable performance. The Resource-Based View and dynamic capabilities theory provide the primary theoretical foundations, complemented by Information Asymmetry Theory and Institutional Theory to account for informational frictions and external contextual pressures. The analysis reveals that these research streams remain fragmented and that the mechanisms connecting AI-enabled decision quality to green finance mobilization and subsequent environmental investment are insufficiently integrated. In response, the article develops a conceptual model comprising five constructs: organizational AI capability, green financial decision quality, access to and mobilization of green finance, green investment, and sustainable performance. Seven theoretical propositions are advanced, including a mediating mechanism through which green investment converts financial resources into sustainable outcomes. The contribution lies in connecting digital transformation and environmental transition within a single process-oriented explanatory architecture. The proposed model provides a theoretically grounded basis for future empirical testing in Moroccan firms and other emerging-economy settings, while highlighting the importance of combining technological capability, decision quality, financing capacity, and effective green investment.

Keywords: artificial intelligence; green financial decision-making; green finance; green investment; sustainable performance; Moroccan firms



1. Introduction

Environmental transition and digital transformation are two major forces currently reshaping corporate strategies and decision-making processes. Artificial intelligence (AI) provides new capabilities for processing information, assessing risk, forecasting outcomes, and supporting decisions, potentially improving how organizations allocate scarce resources. Yet the availability of technology alone does not guarantee improved performance. Its contribution depends on the firm's ability to integrate AI into organizational routines and to convert technological resources into effective decision-making and organizational capabilities (Cimino et al., 2025; Neiroukh et al., 2025).

At the same time, the environmental transition depends closely on firms' capacity to mobilize adequate financial resources. Investments in clean technologies, energy efficiency, emissions reduction, and environmentally improved production processes require financing and managerial commitment. Existing research shows that financing conditions influence firms' ability to undertake green investment (Bouchmel et al., 2024), while green investment can contribute to multiple dimensions of sustainable business performance (Le & Ferasso, 2022). Green finance therefore represents an important enabling resource, but the existence of green financial instruments does not automatically ensure that firms can identify, access, mobilize, and convert those resources into effective environmental investments.

Despite these advances, the literature remains fragmented. Research on AI has largely examined decision-making, innovation, and organizational performance, whereas green finance research has focused more strongly on financial instruments, financing constraints, green investment, and environmental consequences. Recent work has begun to connect AI and sustainable finance through ESG analysis, risk assessment, investment management, and sustainability reporting (Nurmasari & Bilad, 2026). However, limited attention has been devoted to the organizational process through which AI capability may improve sustainability-oriented financial decisions, facilitate the mobilization of green financial resources, and support their conversion into green investments.

This gap is particularly relevant for emerging economies, where firms operate under heterogeneous technological, financial, institutional, and environmental conditions. Morocco provides a useful context for future application because firms are increasingly exposed to both digital transformation and sustainability requirements. Nevertheless, the present study does not

claim to provide empirical evidence from Morocco. Rather, Moroccan firms constitute the priority context in which the proposed theoretical architecture can subsequently be tested. This distinction is important because the purpose of the present contribution is theory development rather than statistical estimation.

The relevance of this contextualization extends beyond the geographical selection of a future empirical setting. In emerging economies such as Morocco, the mechanisms linking AI capability, green financial decision-making, and environmental investment may operate under specific institutional, financial, and technological conditions. Firms may differ substantially in their access to external finance, digital infrastructure, data availability, managerial capabilities, and readiness to integrate ESG information into financial decisions. At the same time, regulatory requirements, financial institutions, public sustainability initiatives, and stakeholder expectations may create external pressures that influence firms' incentives and capacity to mobilize green financial resources. These conditions may shape both the informational value generated by AI and the extent to which improved decision quality can facilitate access to green finance and its subsequent conversion into green investment. Accordingly, the Moroccan context is theoretically relevant not merely as a setting for future empirical validation, but also as an environment in which institutional pressures, financing constraints, and digital readiness may constitute important boundary conditions of the proposed relationships.

Accordingly, the study addresses the following research question: How can organizational AI capability contribute to firms' sustainable performance through green financial decision-making, the mobilization of green finance, and green investment? To answer this question, the study adopts a theoretical and conceptual approach based on a critical and integrative review of the literature.

The Resource-Based View (RBV) (Barney, 1991) and dynamic capabilities theory (Teece et al., 1997) provide the primary organizational foundations of the framework by explaining the strategic value of technological and financial resources and the processes through which these resources are mobilized and reconfigured. These perspectives are complemented by Information Asymmetry Theory, which helps explain how AI-enabled information processing may reduce informational frictions in green financial decisions and financing relationships, and Institutional Theory, which captures how regulatory, normative, and stakeholder pressures may shape firms' engagement with digital technologies, green finance, and environmental investment. Together, these theoretical lenses provide a multidimensional explanation of how

internal capabilities and external contextual conditions may jointly influence the transformation of AI resources into sustainable outcomes.

The contribution of the study lies in developing an integrated framework linking organizational AI capability, green financial decision quality, access to and mobilization of green finance, green investment, and sustainable performance. Rather than assuming a direct effect of technology on performance, the model emphasizes a transformation chain from technological resources to decision capability, from decision capability to financial resource mobilization, and from financial resources to environmental investment and sustainable outcomes. Seven theoretical propositions are formulated to guide future empirical testing. The remainder of the article reviews the relevant literature and theoretical foundations, explains the conceptual methodology, develops the proposed model and propositions, discusses their implications, and concludes with limitations and future research directions.

2. Literature review

The literature on AI, organizational decision-making, sustainable finance, green investment, and sustainable performance is expanding rapidly, yet it remains distributed across partially disconnected research streams. One stream conceptualizes AI as an organizational capability capable of improving the quality, speed, and efficiency of decisions. A second examines financing conditions and firms' ability to undertake environmental investment. A third investigates how green investment contributes to sustainable performance. Collectively, these studies suggest that technological and financial resources create value when firms transform them into effective decision capabilities and investments. What remains insufficiently developed is an integrated explanation of the mechanisms connecting these dimensions within a single conceptual framework, especially in emerging-economy contexts.

2.1. Artificial Intelligence and the Transformation of Financial Decision-Making

Artificial intelligence has acquired a growing role in organizational processes because of its capacity for data processing, prediction, pattern recognition, and decision support. Beyond its treatment as a discrete technology, AI can be understood as an organizational capability whose value depends on its integration with human, informational, managerial, and technological resources. Consequently, AI adoption does not automatically generate superior performance; its effects depend on how effectively it is mobilized in organizational decision processes.

Neiroukh et al. (2025) show that AI capability can contribute to organizational performance through improvements in decision quality and decision speed, while Cimino et al. (2025) emphasize the importance of organizational capabilities in converting AI adoption into sustainable growth outcomes.

This logic is especially relevant to finance, where decision-makers must simultaneously evaluate costs, returns, risks, liquidity, and increasingly environmental and non-financial information. AI can support risk analysis, ESG assessment, investment management, and sustainability reporting (Nurmasari & Bilad, 2026). Its effectiveness nevertheless remains conditioned by data quality, governance, system transparency, managerial competence, and the organization's capacity to interpret outputs. These conditions reinforce the argument that AI should be conceptualized as an enabling capability rather than as an autonomous determinant of performance.

More specifically, AI capability may enhance green financial decision quality through several interrelated informational and analytical mechanisms. First, AI-based analytical systems can process large volumes of heterogeneous financial and non-financial data, allowing decision-makers to integrate conventional indicators of cost, return, liquidity, and risk with environmental and ESG-related information. Second, machine-learning and predictive-analytics applications can support the identification of complex patterns, the comparison of alternative investment scenarios, and the assessment of project-specific risks that may be difficult to capture through conventional decision tools. Third, AI can facilitate the continuous monitoring and structuring of environmental information, thereby improving the informational basis on which green projects are evaluated and prioritized. In this sense, the contribution of AI to green financial decision-making does not arise simply from technological automation. Rather, it derives from the capability to reduce information-processing limitations, integrate multidimensional sustainability criteria, and generate more timely and analytically informed assessments of green financing and investment alternatives.

An information-asymmetry perspective further clarifies this mechanism. Green financial decisions frequently involve information that is unevenly distributed between firms, managers, financial institutions, and other capital providers, particularly regarding project quality, environmental benefits, expected returns, and underlying risk. Such informational frictions may complicate both internal project selection and external financing relationships. By strengthening the collection, processing, verification, and communication of financial and

ESG-related information, organizational AI capability may help reduce these informational gaps and improve the transparency and credibility of green projects. Information Asymmetry Theory therefore complements the capability-based explanation by clarifying why improved information processing can constitute a mechanism connecting AI capability with higher-quality green financial decisions and, potentially, more effective interactions with providers of green capital.

The literature therefore converges on a process-based interpretation: the effects of AI are likely to operate through intermediate organizational mechanisms. A remaining gap concerns financial decisions explicitly oriented toward environmental objectives. Existing AI studies tend to focus on general decision quality or organizational performance, whereas sustainable-finance studies more frequently address technical applications of AI than the internal organizational process through which firms convert AI capability into higher-quality green financial decisions. This gap provides the first building block of the proposed framework.

2.2. Green Finance and Corporate Financing Constraints

The environmental transition requires financial resources to support projects related to energy efficiency, clean technologies, pollution prevention, emissions reduction, circular production, and other environmental improvements. Green finance can direct capital toward such activities. For firms, however, the relevant issue is not only whether green financial instruments exist, but whether those instruments can be identified, accessed, evaluated, and mobilized in ways consistent with investment needs and organizational capabilities.

Financing constraints may reduce firms' capacity to undertake green investments. Bouchmel et al. (2024) show that internal financing supports green investment while financial constraints restrict it. Although parts of this evidence originate from research with strong relevance to smaller firms, the underlying conceptual distinction is applicable more broadly: access to financial resources and the effective conversion of those resources into green investment are analytically distinct stages. A firm may have potential financing opportunities without possessing the information, decision processes, organizational readiness, or project quality required to mobilize them.

This distinction also has an important informational dimension. Providers of green capital must evaluate not only firms' conventional creditworthiness but also the environmental credibility,

expected impact, technical feasibility, and risk profile of the projects for which financing is requested. When firms and external capital providers possess unequal information regarding these characteristics, information asymmetry may increase uncertainty and make financing decisions more difficult. Firms capable of producing structured, credible, and decision-relevant financial and ESG information may therefore be better positioned to communicate project quality and respond to the informational requirements of green finance providers. From this perspective, access to green finance depends not exclusively on the external supply of financial instruments but also on firms' internal capacity to generate, assess, and communicate information capable of reducing uncertainty surrounding environmental projects.

AI may contribute to sustainable finance by strengthening information processing, risk evaluation, ESG assessment, and investment analysis (Nurmasari & Bilad, 2026). Nevertheless, research on corporate green financing and research on organizational AI capability remain insufficiently connected. This separation leaves an important theoretical question concerning whether AI-enabled decision capabilities can facilitate the mobilization of green finance and, consequently, support firms' environmental transition.

2.3. Green Investment and Sustainable Performance

Access to financial resources represents only an enabling stage of environmental transition. Financial resources must subsequently be converted into actual green investments, including investments in cleaner equipment, energy efficiency, resource optimization, waste reduction, emissions reduction, and environmentally improved processes. This distinction between available resources and realized investment is essential because financing does not itself constitute environmental action (Bouchmel et al., 2024).

Green investment can transform a firm's productive and technological base and thereby contribute to sustainable performance. Le and Ferasso (2022), studying manufacturing SMEs in an emerging economy, report a positive relationship between green investment and sustainable business performance while also identifying complementary organizational mechanisms. Although their empirical setting is specific, their findings provide relevant evidence for the broader theoretical mechanism through which environmental investment can convert financial resources into economic and environmental value.

Taken together, the literature suggests that both technology and finance must be translated into organizational capabilities and concrete actions before sustainable outcomes can emerge. Yet financing, investment, AI, and performance are still frequently examined in separate analytical models. The proposed framework responds to this fragmentation by integrating these stages into a single process-oriented explanation.

2.4. Theoretical Foundations: An Integrated Multi-Theoretical Perspective

The Resource-Based View argues that sustained value creation depends not only on the resources possessed by a firm but also on their strategic characteristics and deployment (Barney, 1991). Technological, informational, human, and financial resources can therefore contribute to value when they are effectively combined and embedded in organizational processes. From this perspective, organizational AI capability can be treated as a strategic resource configuration whose effects on performance are not automatic but are realized through its use in decision-making and related organizational activities (Neiroukh et al., 2025).

Dynamic capabilities theory complements the RBV by explaining how firms integrate, adapt, and reconfigure resources in response to changing environments (Teece et al., 1997). Cimino et al. (2025) demonstrate the relevance of a dynamic-capability perspective for understanding how firms can exploit AI in support of sustainable growth. In the present model, this perspective helps explain the movement from AI capability to improved decision processes and from mobilized financial resources to actual green investments.

The two perspectives are therefore complementary. The RBV identifies the strategic potential of technological and financial resources, while dynamic capabilities theory explains the organizational processes through which those resources are sensed, mobilized, combined, transformed, and reconfigured. Their joint use helps avoid technological or financial determinism and supports a process view of sustainable performance.

Information Asymmetry Theory (Akerlof, 1970) provides a complementary explanation of the informational mechanisms embedded in the proposed framework. Financing relationships are characterized by situations in which economic actors may possess unequal information regarding project quality, expected returns, risk, and managerial intentions. This issue becomes particularly relevant in green finance because capital providers may need to evaluate both conventional financial characteristics and less standardized environmental and ESG

information. Within the proposed framework, organizational AI capability may contribute to reducing such informational frictions by improving the collection, processing, comparison, and communication of financial and non-financial information. The theory therefore helps explain why stronger AI-enabled information capabilities may improve green financial decision quality and potentially facilitate firms' interactions with providers of green capital.

Institutional Theory (DiMaggio & Powell, 1983) adds an external dimension to this predominantly resource- and information-based explanation. Firms do not develop technological, financial, and environmental capabilities in isolation; their decisions are embedded within regulatory, normative, and market environments that influence organizational priorities and behavior. Regulatory requirements, expectations from financial institutions and investors, sustainability standards, competitive pressures, and broader stakeholder demands may encourage firms to improve environmental information, adopt digital decision-support capabilities, seek green financing, and undertake environmental investment. These pressures may be particularly consequential in emerging economies, where institutional arrangements, financial-market development, and digital readiness can vary substantially across organizations and sectors. Institutional Theory therefore helps explain why similar internal capabilities may not generate identical outcomes across organizational and national contexts.

Taken together, the four theoretical perspectives perform distinct but complementary functions within the framework. The RBV identifies AI capability and financial resources as potentially strategic organizational resources; dynamic capabilities theory explains how these resources are mobilized, transformed, and reconfigured; Information Asymmetry Theory clarifies the informational mechanisms through which AI may improve decision quality and financing relationships; and Institutional Theory explains how external pressures and contextual conditions may enable or constrain these processes. This theoretical complementarity provides a broader basis for explaining both the internal mechanisms and the external boundary conditions underlying the proposed model.

2.5. Critical Synthesis and Research Gap

Several points of convergence emerge from prior research. First, studies of AI capability suggest that its contribution to performance is mediated by organizational mechanisms, including decision quality (Neiroukh et al., 2025). Second, research on green investment shows

that financing conditions can enable or constrain environmental investment (Bouchmel et al., 2024). Third, green investment can contribute to sustainable performance, although the strength and form of this relationship may depend on complementary organizational mechanisms and contextual conditions (Le & Ferasso, 2022). Finally, recent work on AI and sustainability supports a resource- and capability-based interpretation of digital transformation (Cimino et al., 2025).

These convergences coexist with important limitations. AI-performance relationships are sometimes modeled directly, whereas other studies emphasize intermediate decision processes. Green-finance research frequently focuses on instruments and constraints but gives less attention to internal decision capabilities that may enable firms to select and mobilize financial resources. Green-investment research, in turn, supports a performance contribution without establishing that effects are identical across industries, organizational sizes, or institutional settings.

A second limitation is relational fragmentation. Existing studies provide individual pieces of the mechanism—AI capability and decision-making; AI and sustainable finance; financing and green investment; green investment and sustainable performance—but these relationships are generally examined separately and often through different theoretical lenses. Recent work on AI in green finance confirms the growing convergence of technological and financial dimensions while also emphasizing challenges involving data, governance, and organizational integration (Nurmasari & Bilad, 2026).

A recent bibliometric analysis of green finance and sustainable performance further highlights the need to investigate intermediary mechanisms and to extend research to underrepresented emerging-economy contexts (Mejji & Darkaoui, 2026a).

The resulting research gap is therefore not the complete absence of knowledge about any single construct. Rather, it lies in the absence of an integrated explanation of the process through which organizational AI capability can be transformed into sustainability-oriented financial decision capability, facilitate the mobilization of green financial resources, support their conversion into green investment, and ultimately contribute to sustainable performance. The RBV and dynamic capabilities theory provide an appropriate basis for connecting these fragmented insights within a coherent theoretical architecture.

Beyond this relational fragmentation, the literature also provides an incomplete account of the informational and contextual conditions under which these mechanisms may operate. The potential role of AI in reducing information asymmetry between firms and green capital providers remains insufficiently integrated into organizational models of sustainable finance. Likewise, institutional pressures, financing constraints, governance arrangements, digital readiness, and sectoral characteristics are often treated separately rather than as conditions that may shape the translation of technological capability into financial mobilization and environmental investment. This limitation is especially relevant to emerging-economy contexts, where firms may face heterogeneous access to digital infrastructure, financial resources, institutional support, and sustainability-related information. Integrating these dimensions therefore requires not only connecting previously fragmented constructs but also specifying the theoretical conditions under which their relationships may strengthen, weaken, or vary across organizational contexts.

3. Methodology

This study adopts a theoretical and conceptual methodology designed to develop an integrated explanation of the mechanisms linking organizational AI capability, sustainability-oriented financial decision-making, green financial resource mobilization, green investment, and sustainable performance. Unlike empirical research, the study does not rely on primary-data collection or statistical testing. It integrates theoretical and empirical knowledge from several research streams. Conceptual articles represent a distinct form of theory development when they establish new relationships among existing concepts, propose explanatory mechanisms, or reorganize fragmented knowledge within a coherent framework (Jaakkola, 2020; MacInnis, 2011).

More specifically, the study follows a conceptual model-development logic. Jaakkola (2020) distinguishes several forms of conceptual contribution and emphasizes that model papers require an explicit research design explaining how theories and concepts are selected, related, and integrated. Literature is therefore treated not merely as material to summarize but as the analytical basis for identifying relevant constructs, comparing existing explanations, and progressively developing a new system of theoretical relationships.

3.1. Research Design and Scope

The research design is non-empirical, theoretical, and integrative. It connects knowledge distributed across AI and organizational capability research, financial decision-making, green finance, green investment, and sustainable performance. Such a design is appropriate when a problem is characterized by interdisciplinary and fragmented literature and when the primary objective is to establish theoretical connections rather than produce a new empirical estimate (Jaakkola, 2020; Snyder, 2019).

The study follows the logic of a model paper in the sense described by Jaakkola (2020). The model represents theoretical relationships among several constructs and explains the focal phenomenon through a coherent set of mechanisms. The purpose is therefore not to statistically test predetermined relationships but to determine, from existing evidence and theoretical foundations, which relationships can reasonably be proposed and how they fit together within a new explanatory architecture.

The scope is broadened from SMEs to firms in general. Morocco is retained as the priority application context because the framework is intended to inform future investigation of how firms may jointly navigate digital transformation and environmental transition. However, because no primary Moroccan data are collected in the present study, Morocco is not treated as an empirical field from which causal findings can be claimed. The model is instead designed as a theoretical architecture for subsequent validation among Moroccan firms of different sizes and sectors. Firm size is consequently treated as a potential boundary condition for future empirical research rather than as a defining restriction of the conceptual model.

The RBV and dynamic capabilities theory constitute the primary organizational foundations of the framework, explaining respectively the strategic value of resources and their integration and reconfiguration. They are complemented by Information Asymmetry Theory (Akerlof, 1970), which explains informational frictions in financing relationships, and Institutional Theory (DiMaggio & Powell, 1983), which captures the influence of regulatory, normative, and stakeholder pressures. Together, these perspectives connect internal organizational capabilities with the informational and contextual conditions shaping sustainable outcomes.

3.2. Data Sources and Literature Selection

The material used in the study is exclusively documentary and consists of theoretical and empirical peer-reviewed publications addressing artificial intelligence, organizational decision-making, green finance, green investment, and sustainable performance. A critical and integrative literature-review approach is adopted because it is suited to research that seeks to connect multiple scientific streams and develop a new conceptualization (Snyder, 2019). Selection therefore prioritizes publications with strong conceptual or theoretical relevance to the proposed relationships, including studies conducted in emerging economies and organizational contexts in which financing constraints, digital capability, and environmental investment are salient.

The review is not intended to constitute an exhaustive systematic corpus. Publications are selected according to their contribution to construct definition, mechanism explanation, theoretical grounding, and proposition development. Accordingly, no PRISMA protocol is used. Consistent with the purpose of conceptual research, rigor is sought through the relevance of the selected works, explicit theoretical reasoning, construct differentiation, and transparency regarding how existing evidence is integrated into the proposed model (Jaakkola, 2020; Snyder, 2019).

3.3. Analytical Approach, Validity, and Robustness

The documentary material is analyzed through conceptual and relational synthesis. The analysis compares selected studies to identify convergences, divergences, and relationships that remain insufficiently explored. Conceptual construction first distinguishes the principal domains of technological resources, decision capabilities, financial resources, green investment, and sustainable performance (MacInnis, 2011).

The mechanisms linking these domains are then examined to establish theoretically coherent relationships among organizational capability, decisions, financial mobilization, investment, and sustainable outcomes. These relationships are interpreted primarily through the RBV and dynamic capabilities theory, complemented by Information Asymmetry Theory and Institutional Theory to account for informational frictions and external contextual pressures. This approach enables the construction of an integrated theoretical architecture from knowledge dispersed across multiple research streams (Jaakkola, 2020; MacInnis, 2011).

The validity and robustness of the model rest on clear construct differentiation, theoretical justification for each proposed relationship, and confrontation of evidence from multiple streams of literature. A distinction is maintained between relationships with relatively direct empirical support and relationships generated primarily through theoretical integration. The study does not establish empirical causality; all relationships are therefore formulated as theoretical propositions intended to structure the conceptual model and guide subsequent empirical validation (Jaakkola, 2020).

4. Conceptual Model and Theoretical Propositions

The critical synthesis of the literature and the integration of the four complementary theoretical perspectives lead to a conceptual framework explaining how organizational AI capability may contribute to sustainable performance through a sequence of decision, financing, and investment mechanisms. The model does not assume that AI adoption automatically improves sustainable performance. Instead, it identifies organizational processes through which technological capability may be converted into decision quality, financial resource mobilization, environmental investment, and sustainable outcomes. The framework contains five constructs: organizational AI capability, green financial decision quality, access to and mobilization of green finance, green investment, and sustainable performance.

4.1. Organizational AI Capability and Green Financial Decision Quality

The first component concerns the transformation of technological capability into decision capability. Organizational AI capability refers not merely to the availability of algorithms or tools but to the firm's ability to integrate AI technologies, data, skills, and managerial processes in ways that support organizational activities. This distinction matters because the value of technology depends on how it is deployed in actual decision processes.

Neiroukh et al. (2025) show that AI capabilities can improve decision quality and speed and that these mechanisms help explain the relationship between AI and organizational performance. AI can increase information-processing capacity, identify complex patterns, and support the evaluation of alternatives. In sustainable finance, these functions are particularly relevant because decision-makers must combine conventional information on cost, return, and risk with environmental and ESG information. Applications of AI in green finance include risk

assessment, ESG analysis, investment management, and sustainability reporting (Nurmasari & Bilad, 2026).

From an RBV perspective, AI capability is an organizational resource whose value depends on effective deployment (Barney, 1991). Green financial decision quality therefore represents one mechanism through which technological capability can be converted into a useful organizational capability.

More specifically, AI can enhance green financial decision quality by integrating financial and ESG information, identifying complex patterns, improving project-risk assessment, and reducing informational gaps surrounding green projects. These mechanisms clarify how AI capability can translate technological resources into more informed sustainability-oriented financial decisions (Nurmasari & Bilad, 2026).

P1. Organizational AI capability positively contributes to the quality of firms' green financial decisions.

4.2. Green Financial Decision Quality and Access to Green Finance

The second stage concerns the transformation of decision capability into financial mobilization capability. Green financial decision quality can be defined as the firm's ability to select financially sound alternatives while integrating conventional financial criteria and the environmental implications of proposed projects.

Financing constraints can obstruct green investment (Bouchmel et al., 2024), but the external availability of financing instruments does not ensure that firms can identify, compare, or mobilize them. Higher-quality decision processes may improve the evaluation of costs, risks, eligibility conditions, financing structures, and the fit between corporate needs and available green-finance solutions. This link represents an important theoretical articulation between two literatures that are still frequently separated: organizational decision-making and green finance.

P2. Higher green financial decision quality positively contributes to firms' access to and mobilization of green finance.

4.3. Organizational AI Capability and Access to Green Finance

The model also proposes a relationship between organizational AI capability and the mobilization of green financial resources. This direct path complements the mechanism operating through decision quality and recognizes that technological and informational capabilities may affect the management of financial relationships more broadly.

AI can help structure and exploit financial and non-financial information required for project evaluation, risk monitoring, and environmental reporting. In sustainable finance, AI applications have been identified in ESG analysis, risk assessment, and investment management (Nurmasari & Bilad, 2026). These applications may strengthen the informational capacity required to prepare, evaluate, and communicate environmentally oriented financing projects.

This relationship should nevertheless be treated as a theoretical proposition requiring empirical validation. Existing evidence is stronger regarding AI applications in finance and sustainable finance than regarding a specifically established causal relationship between organizational AI capability and corporate access to green finance. Its inclusion therefore identifies a meaningful research avenue rather than reporting an established empirical fact.

P3. Organizational AI capability positively contributes to firms' access to and mobilization of green finance.

4.4. Access to Green Finance and Green Investment

The distinction between green finance and green investment is central to the model. Green finance refers to financial resources that a firm can access and mobilize to support its environmental transition. Green investment refers to the actual allocation of resources to equipment, technologies, processes, or projects expected to generate environmental benefits.

This distinction prevents the assumption that financial availability automatically constitutes environmental action. Bouchmel et al. (2024) show that financing conditions are materially associated with green investment: internal financing supports such investment whereas financial constraints restrict it. Dynamic capabilities theory reinforces this interpretation because organizational adaptation depends on the capacity to integrate and reconfigure

resources (Teece et al., 1997). Mobilizing finance creates an enabling condition; converting it into green investment materializes resource reconfiguration.

P4. Access to and mobilization of green finance positively contribute to firms' green investment.

4.5. Green Investment and Sustainable Performance

Green investment represents the principal mechanism through which financial resources are converted into assets and practices capable of contributing to sustainable performance. Investments in energy efficiency, clean technology, waste reduction, emissions reduction, and resource optimization may improve environmental outcomes while also supporting selected economic and operational outcomes.

Le and Ferasso (2022), using evidence from manufacturing SMEs in an emerging economy, identify a positive relationship between green investment and sustainable business performance while highlighting complementary mechanisms such as green innovation and corporate social responsibility. The relevance of this evidence for the present general-firm model lies in the underlying resource-conversion mechanism rather than in an assumption that effect sizes are identical across firm sizes or sectors.

The RBV and dynamic capabilities theory support this logic. Financial resources do not constitute performance by themselves; they must be converted into assets, technologies, and organizational practices capable of creating value (Barney, 1991; Teece et al., 1997). Green investment represents a concrete form of this transformation.

P5. Green investment positively contributes to firms' sustainable performance.

4.6. Access to Green Finance and Sustainable Performance

The literature also allows the possibility that access to environmentally oriented financial resources may support sustainable performance beyond their direct conversion into identifiable green investments. Greater financial availability can reduce constraints, improve adaptive capacity, and support the continuity of environmental projects.

However, access to resources does not guarantee their transformation into organizational outcomes. Bouchmel et al. (2024) establish the importance of financing conditions for green investment, while Le and Ferasso (2022) show the relevance of green investment for sustainable performance. Bringing these findings together suggests the need to distinguish a potential direct contribution of green finance from an indirect mechanism operating through investment. Empirical testing is required to determine their relative importance.

P6. Access to and mobilization of green finance positively contribute to firms' sustainable performance.

4.7. The Mediating Role of Green Investment

The preceding propositions imply an indirect mechanism linking green finance to sustainable performance. Financial resources and constraints are associated with the realization of green investments (Bouchmel et al., 2024), while green investments can contribute to sustainable performance (Le & Ferasso, 2022). Integrating these two sets of findings suggests that green investment can operate as a conversion mechanism: finance represents a potential resource, whereas investment materializes that resource in technologies, assets, and practices capable of generating sustainable outcomes.

Dynamic capabilities theory deepens this interpretation. Access to resources alone does not explain performance; firms must mobilize and reconfigure resources in response to environmental change (Teece et al., 1997). Green investment is an observable manifestation of such reconfiguration and can therefore transmit part of the contribution of green finance to sustainable performance.

Empirical evidence from Moroccan SMEs further highlights the relevance of this mechanism, suggesting that green investment partially mediates the relationship between green finance and SME growth (Mejji & Darkaoui, 2026b).

P7. Green investment mediates the relationship between access to and mobilization of green finance and firms' sustainable performance.

4.8. Integrated Architecture of the Conceptual Model

The seven propositions form a theoretical architecture based on the progressive transformation of resources. Organizational AI capability constitutes the technological entry point. Its value may emerge through improved green financial decision quality and through stronger informational capabilities relevant to green-finance mobilization. Mobilized financial resources can then be converted into green investments, which transform available finance into assets and practices capable of contributing to sustainable performance.

The model therefore does not posit an automatic direct effect of AI on sustainable performance. It proposes a sequence in which technological resources are converted into decision capability, decision capability facilitates financial resource mobilization, and financial resources are converted into environmental investment before contributing to sustainable outcomes. This architecture reflects the complementarity of the RBV, which identifies strategically relevant resources, and dynamic capabilities theory, which explains their mobilization and reconfiguration (Barney, 1991; Teece et al., 1997). Figure 1 presents the proposed conceptual model, and Table 1 summarizes the seven propositions.

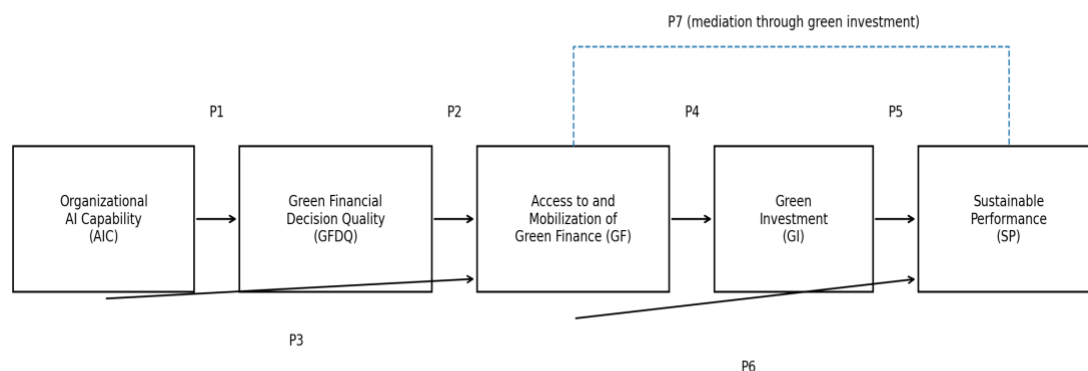


Figure 1. Proposed conceptual model

Source: Authors' elaboration based on the literature.

Table 1. Summary of theoretical propositions

Proposition	Proposed theoretical relationship	Mechanism
P1	Organizational AI capability → Green financial decision quality	Technological → decision
P2	Green financial decision quality → Access to and mobilization of green finance	Decision → financial
P3	Organizational AI capability → Access to and mobilization of green finance	Technological → financial
P4	Access to and mobilization of green finance → Green investment	Financial → investment
P5	Green investment → Sustainable performance	Investment → performance
P6	Access to and mobilization of green finance → Sustainable performance	Financial → performance
P7	Green finance → Green investment → Sustainable performance	Mediation

Source: Authors' elaboration based on the literature.

The conceptual contribution does not reside in each relationship considered separately, because several paths already receive partial support from prior studies. Its primary contribution lies in integrating them into a single explanatory chain connecting AI capability, green financial decision quality, financial resource mobilization, green investment, and sustainable performance. The model thereby provides a basis for future empirical research on the conditions under which digital transformation can effectively support environmental transition across firms of different sizes and sectors.

5. Results and Discussion

Because the study is conceptual rather than empirical, the term results refer to the theoretical outcomes of the integrative analysis: the identification of five core constructs, the specification of seven theoretically grounded relationships, and the development of a process model connecting digital and environmental transformation. The model suggests that organizational AI capability contributes to sustainable performance not as an isolated technological input but through a sequence of decision, financing, and investment mechanisms.

A first theoretical outcome is the positioning of green financial decision quality as a mechanism connecting organizational AI capability to green-finance mobilization. This extends research showing that AI capability can improve organizational decision processes (Neiroukh et al., 2025) by applying the mechanism to sustainability-oriented financial decisions. At the same time, it extends green-finance research beyond an exclusive emphasis on the external availability of financing. Access to green finance may also depend on firms' internal capacity to generate and interpret information, assess financing alternatives, evaluate environmental projects, and match financing solutions with strategic objectives.

A second outcome is the explicit separation of green finance from green investment. The availability or mobilization of a financial resource does not guarantee its transformation into cleaner technologies, equipment, or environmental practices. Bouchmel et al. (2024) show that financing conditions influence green investment, whereas Le and Ferasso (2022) identify a contribution of green investment to sustainable performance. The mediating role attributed to green investment integrates these insights by explaining how financial resources can be transformed into sustainable outcomes: investment is the stage at which finance becomes a tangible asset, technology, or organizational practice.

A third contribution concerns the complementary use of the RBV and dynamic capabilities theory. The RBV enables technological capability and financial resources to be understood as potentially valuable resources, while dynamic capabilities theory explains their mobilization, transformation, and reconfiguration under changing environmental conditions (Barney, 1991; Teece et al., 1997). The model therefore shifts attention from resource possession toward resource conversion. Having AI tools or access to green finance is not sufficient; sustainable value depends on the organizational capacity to convert technology into decision capability and finance into environmental investment. Information Asymmetry Theory complements this

resource-based explanation by clarifying how AI may reduce informational frictions in green financial decisions, while Institutional Theory highlights how external regulatory, normative, and stakeholder pressures may condition these organizational processes.

Broadening the conceptual scope from SMEs to firms in general also clarifies the model's intended level of abstraction. Some of the empirical evidence mobilized in developing the model originates from SME settings, particularly evidence on AI adoption, financing constraints, and green investment (Cimino et al., 2025; Le & Ferasso, 2022). These studies provide support for underlying mechanisms but do not establish that all firms face identical constraints or realize identical effects. Firm size, sector, digital maturity, ownership structure, and institutional environment should therefore be treated as potential boundary conditions in future testing rather than assumed away.

For Moroccan firms, the framework offers a research agenda rather than an empirical conclusion. Future studies can investigate whether organizational AI capability helps firms address informational and analytical barriers associated with sustainability-oriented financing and whether green investment actually mediates the finance–performance relationship. A multi-sector Moroccan sample would also make it possible to compare large firms, medium-sized firms, and smaller organizations, thereby determining whether the proposed relationships vary with organizational scale and resource availability.

The model has managerial implications. Firms seeking sustainable performance may benefit from treating AI, finance, and environmental investment as interdependent capability domains rather than independent initiatives. Developing AI tools without the data governance, analytical skills, and decision routines needed to use them may generate limited value. Likewise, obtaining green financing without investment-selection capability and implementation capacity may fail to produce environmental or economic benefits. The conceptual framework therefore directs managerial attention toward the organizational interfaces between technology, decision-making, financing, and investment.

The framework also has implications for financial institutions and public support organizations. Policies designed to accelerate environmental transition may be more effective when access to green finance is accompanied by mechanisms that strengthen firms' project assessment, information quality, digital capabilities, and resource-allocation skills. However, these

implications remain theoretically derived and should be interpreted as propositions for practice and empirical investigation rather than as evaluated policy effects.

6. Conclusion

This study sought to explain how organizational AI capability may support sustainable performance by integrating the decision-making, financial, and environmental mechanisms that structure this relationship. The literature indicates that these dimensions have often been studied separately, even though their integration offers a way to understand digital transformation and environmental transition as mutually connected organizational processes. The proposed model answers the research question by suggesting that the sustainability contribution of AI is not necessarily direct but may arise through a progressive transformation of organizational resources and capabilities (Neiroukh et al., 2025; Nurmasari & Bilad, 2026).

The principal theoretical outcome is a conceptual chain linking organizational AI capability, green financial decision quality, access to and mobilization of green finance, green investment, and sustainable performance. Seven propositions specify the relationships within this architecture, including the mediating role of green investment in the relationship between green finance and sustainable performance. The model is consistent with evidence showing the relevance of financing conditions for green investment and the contribution of green investment to sustainable business performance (Bouchmel et al., 2024; Le & Ferasso, 2022). These propositions remain theoretical and must not be interpreted as empirically validated relationships in the present study.

Theoretically, the framework reduces the identified knowledge gap by connecting research streams that remain insufficiently integrated. Combining the RBV and dynamic capabilities theory distinguishes resources possessed by the firm from the organizational mechanisms through which those resources are mobilized, transformed, and reconfigured to generate sustainable outcomes (Barney, 1991; Teece et al., 1997). The model therefore emphasizes that neither AI technology nor green finance is sufficient in isolation: their contribution depends on the firm's ability to convert them into higher-quality decisions, effectively mobilized resources, and environmental investments.

Managerially, the model encourages firms to develop digital, financial, and environmental capabilities jointly. For financial institutions and public organizations, it suggests that

improving the supply of green finance may be complemented by support for firms' analytical, decision-making, and investment-allocation capabilities. Such support could be particularly relevant where environmental projects require the integration of conventional financial criteria with ESG and other non-financial information.

The main limitation is the conceptual nature of the research. The proposed relationships require empirical testing before their magnitude, causality, and boundary conditions can be established. Future research should test the seven propositions among Moroccan firms using appropriate quantitative designs and could examine whether firm size, sector, digital maturity, financing constraints, or institutional conditions moderate the proposed relationships. Comparative studies across emerging economies could further assess the model's external relevance and clarify how institutional environments shape the relationship among AI capability, green finance, green investment, and sustainable performance.

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