INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 18 **No:** 03 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 374-396) **Doi:** 10.34109/ijefs.2026180316
Received: 11.07.2026 | **Accepted:** 20.08.2026 | **Published Online:** 30.09.2026

-RESEARCH ARTICLE-

REFRAMING SUSTAINABLE BUSINESS MODEL TRANSITION AS AN ECONOMIC IMPERATIVE: TOWARD A MATURITY FRAMEWORK FOR LONG-TERM FIRM VIABILITY

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─Abstract─

This article conceptualises the transformation of sustainable business models as an economic necessity arising from the progressive internalisation of environmental and social externalities. As sustainability increasingly affects firms' cost structures, access to finance, exposure to risk, and competitive positioning, business model transformation can no longer be understood predominantly through the lenses of legitimacy or regulatory compliance. The article contends that, once sustainability acquires substantive economic consequences, conventional analytical approaches that treat transformation as static, binary, or event-driven are inadequate for capturing its depth, continuity, and evolving nature. Accordingly, the article advances a maturity perspective as a necessary conceptual approach. Drawing extensively on the literature concerning sustainable business models, institutional theory, dynamic capabilities theory, and maturity frameworks, it identifies four fundamental theoretical conditions that underpin such a perspective and develops three conceptual theses to illuminate the inherent relationship among economic substance, maturity progression, and firms' long-term viability. Rather than specifying particular maturity dimensions, levels, or

Citation (APA): Zhao, Z., Thesenvitz, R. V. (2026). Reframing Sustainable Business Model Transition as an Economic Imperative: Toward a Maturity Framework for Long-Term Firm Viability. *International Journal of Economics and Finance Studies*, 18(03), 374-396. doi: 10.34109/ijefs.2026180316

Vol: 18 **No:** 03 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 374-396) **Doi:** 10.34109/ijefs.2026180316

evaluation frameworks, the principal contribution of the article is to establish a conceptual foundation upon which future research can develop and operationalise a maturity-oriented understanding of sustainable business model transformation.

Keywords: Sustainable Business Model Transition; Externality Internalisation; Economic Imperative; Maturity Perspective; Long-Term Firm Viability.

INTRODUCTION

Environmental and social externalities are progressively being incorporated into economic decision-making through regulation, disclosure requirements, supply chain governance, investor oversight, and market-based pressures. Consequently, sustainability is increasingly influencing firms' cost structures, financing conditions, risk profiles, and competitive positions (Hart & Dowell, 2011). Such pressures are not temporary phenomena but reflect a structural transformation in the underlying mechanisms through which economies organise processes of value creation, distribution, and capture. Traditional approaches to sustainability have generally treated environmental and social concerns either as constraints that organisations should eliminate or as peripheral areas in which additional benefits can be generated. Although these approaches have provided valuable insights, they remain insufficiently transformative to capture the scale and continuing nature of the change currently taking place. Sustainability has therefore moved beyond its conventional role in compliance and reputation management and has become an economic imperative capable of fundamentally altering competitive dynamics among firms (Porter, 2011). Firms that do not adapt their business models to these changing conditions may experience difficulties in preserving their reputation and competitive position, face restricted access to capital, and ultimately jeopardise their long-term viability.

Against this background, this article seeks to develop a conceptual basis for examining sustainable business model transformation through a "maturity" perspective. The analysis first conceptualises such transformation as an economic necessity arising from the "externality internalisation" process. It then considers why conventional analytical approaches become inadequate when sustainability develops substantive economic consequences. On this basis, the article identifies the minimum theoretical requirements that a maturity perspective must satisfy and further examines how such a perspective is theoretically related to the long-term survival capability of firms. The paper advances three principal contributions. First, it reconceptualises sustainable business model transformation as an economic necessity arising from the internalization of externalities, rather than treating it principally because of normative expectations or compliance requirements. Second, it argues that conventional analytical approaches based on static conditions, binary distinctions, or discrete events become inadequate once sustainability assumes substantive economic relevance, as such approaches cannot

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sufficiently capture the evolving nature of the transformation. Third, it specifies the minimum theoretical conditions that a "maturity perspective" must fulfil to possess analytical value, thereby providing a conceptual basis for subsequent research without imposing a predetermined definition of maturity. In this respect, the increasing economic significance of sustainability renders conventional static, binary, and event-based approaches insufficient for explaining business model transformation, making the development of a maturity-oriented perspective conceptually necessary.

The article is guided by three research questions: Why should sustainable business model transformation be understood as an economic necessity rather than primarily as a matter of normative expectations or compliance? When such transformation becomes economically substantive, why are existing analytical perspectives inadequate, and on what grounds is a "maturity" perspective conceptually required? What fundamental theoretical conditions must a sustainable business model maturity perspective satisfy to ensure its analytical utility? The paper employs an integrative literature review combined with theoretical synthesis. Relevant scholarship is identified and evaluated through a structured search process and citation tracing across several interconnected fields, including sustainable business models, internalization of externalities and economic importance, institutional pressure and strategic adaptation, dynamic capabilities, and maturity framework. The selection of literature is guided principally by conceptual relevance rather than by the volume or breadth of empirical coverage. Accordingly, the objective is not to provide an exhaustive mapping of the existing literature, but to develop a coherent and internally consistent theoretical synthesis that can provide a foundation for subsequent research.

LITERATURE REVIEW

In developing the conceptual basis for a "maturity perspective" on sustainable business model transformation, this paper integrates insights from four complementary theoretical traditions. Although each perspective offers a valuable explanation of particular aspects of sustainable business model transition, none provides a sufficiently comprehensive account when considered independently. Their respective limitations therefore provide the rationale for developing a more integrated conceptual foundation. Table 1 synthesises these theoretical foundations by outlining the principal contribution of each school of thought to understanding sustainable business model transition and identifying the corresponding limitations that underpin the need for the integrative approach adopted in this study.

As indicated in Table 1, institutional theory provides substantial insight into the forces that prompt organisational restructuring, yet it offers limited explanation of how firms effectively respond and adapt to those pressures (Kauppi, 2022). In contrast, the dynamic capabilities framework provides a useful account of the mechanisms through which organisational adaptation occurs, but gives insufficient attention to the external

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pressures that initiate such processes (Teece, 2022). Maturity frameworks generally function as instruments for evaluating developmental states and, as such, tend to provide limited theoretical explanation of the underlying processes through which maturity is achieved (Thomson et al., 2022).

Table 1: Theoretical Foundations and their Contributions to the Framework

Theoretical Domain	Key Contribution	Limitation Addressed
Institutional Theory	Interpretates causes restructuring pressures using coercive, mimetic and normative mechanisms.	Fails to tell how firms can react successfully to pressures
Dynamic Capabilities	Gives organisational adaptation mechanisms: sensing, seizing, transforming.	Does not state what pressures cause adaptation
Maturity Frameworks	Offers arranged for the evaluation of growth in the power domains	Lacks conceptual foundation on maturity creating processes
Economic Imperative	Frames sustainability as source of competitive advantage	Lacks mechanisms of business model transformation

Similarly, the economic imperative perspective recognises sustainability as a potential source of competitive advantage, but does not adequately explain the processes through which firms transform their business models in response to sustainability-related pressures (Hart, 1995). Taken together, these theoretical perspectives have established why sustainable business model transformation has become increasingly important from an analytical standpoint. Nevertheless, they remain insufficient as an integrated conceptual basis once sustainability assumes substantive economic significance. In particular, they do not adequately account for the depth, continuity, and developmental trajectory through which sustainable business model transformation unfolds.

Sustainable Business Model Discussion

Over the past two decades, scholarship on sustainable business models has undergone substantial development. Early studies primarily sought to identify and classify sustainable business model archetypes, including approaches centred on eco-efficiency, the circular economy, and social enterprise (Bocken et al., 2014). Subsequent research increasingly positioned business model innovation as a mechanism through which sustainability objectives could be translated into organisational practice. Within this stream, scholars have examined the ways in which firms redesign their value propositions, value creation activities, and value capture mechanisms to respond to environmental and social challenges (Geissdoerfer et al., 2018).

At its core, the business model concept provides a framework for explaining how firms create, deliver, and capture value. The model proposed by Osterwalder and Pigneur (2013) has consequently become influential across both academic research and managerial practice. Applying a sustainability perspective to business models further demonstrates that environmental and social considerations can become integral

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components of the underlying logic through which a firm operates, rather than remaining peripheral concerns. This integrative orientation has gained increasing relevance as sustainability-related pressures intensify and firms recognise that incremental modifications to existing business models may no longer provide an adequate response.

Nevertheless, an important conceptual gap remains. Much of the existing literature continues to conceptualise sustainable business models primarily as relatively stable configurations or desired end states, rather than examining them as processes of continuous transformation that unfold over time. Consequently, comparatively limited attention has been given to how firms move towards viable sustainable business models and to the conditions that distinguish successful transformations from unsuccessful ones (Lüdeke-Freund et al., 2016). Existing scholarship also frequently relies on static representations of business model configurations, dichotomous classifications of models as sustainable or unsustainable, and accounts of innovation centred on discrete events. While such approaches offer valuable insights into particular aspects of sustainable business models, they provide an insufficient basis for explaining the broader transformation process once sustainability assumes substantive economic importance.

Institutional Theory

Institutional theory provides an important basis for explaining the external forces that encourage firms to adopt sustainable practices. DiMaggio and Powell (1983) identify three forms of institutional isomorphism through which such pressures are exerted. Coercive pressures arise from regulatory requirements and stakeholder expectations; mimetic pressures emerge under conditions of uncertainty, encouraging firms to emulate practices adopted by successful peers; and normative pressures develop from shared values, professional standards, and established norms. These institutional forces can shape corporate sustainability practices through changes in environmental and industrial policies, investor expectations, and broader societal understandings of corporate responsibility (Bansal, 2005).

The economic significance of these pressures becomes more pronounced when socially defined expectations are translated into tangible economic constraints through the internalisation of externalities. Sustainability can consequently become an economic necessity when carbon emissions are assigned a financial cost, supply chain transparency becomes an obligatory condition, or the social licence to operate depends upon firms demonstrating tangible benefits to their communities (Elkington & Rowlands, 1999). As institutional expectations acquire such economic materiality, firms are increasingly compelled to reconsider the fundamental logic underpinning their business models. However, while institutional theory is effective in explaining how external pressures are transmitted to organisations, it provides a less complete account

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of how firms' responses develop, deepen, and evolve over time once those pressures acquire substantive economic consequences.

Dynamic Capabilities

Dynamic capabilities theory provides a framework for understanding how firms adjust their strategies and operations in response to changing environmental conditions. Teece et al. (1997) conceptualised dynamic capabilities as the organisational capacity to integrate, develop, and reconfigure both internal and external competencies as circumstances change. Building on this foundation, Teece (2007) identified three central processes: sensing, which involves recognising emerging opportunities and threats; seizing, which concerns mobilising and adapting resources to capture identified opportunities; and transforming, which entails the reconfiguration of organisational resources and routines.

The dynamic capabilities perspective has become particularly influential in explaining how firms can sustain competitive advantage under conditions of environmental turbulence. Unlike relatively static resource-based approaches, which primarily emphasise the possession and accumulation of valuable resources, dynamic capabilities theory focuses on the organisational processes through which the resource base is continually modified in response to changing circumstances. This process-oriented emphasis provides an important theoretical basis for understanding sustainability transitions because it shifts attention from one-off adjustments towards continuing organisational adaptation. Within a sustainability context, dynamic capabilities can enable firms to recognise emerging environmental and social developments, formulate appropriate responses, and subsequently modify their operational arrangements to accommodate those changes (Aragón-Correa & Sharma, 2003). Empirical evidence further suggests that firms possessing stronger dynamic capabilities are better equipped to integrate sustainability considerations into strategic decision-making and to achieve improved environmental and financial performance (Hart & Dowell, 2011).

Despite this explanatory strength, dynamic capabilities theory does not, by itself, fully account for the temporal, multidimensional, and non-equilibrium nature of organisational evolution. It explains the mechanisms through which firms adapt, but provides less clarity regarding how these adaptive processes accumulate, develop, and progress over time. This limitation is particularly important for understanding sustainable business model transformation and consequently provides part of the theoretical rationale for introducing a "maturity perspective".

Maturity Models and Organisational Development

Maturity models offer a structured means of assessing and guiding organisational development and change. Originating in software engineering through the Capability Maturity Model (CMM), their application has subsequently expanded to diverse areas,

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including project management, process improvement, and strategic management (Pörtner et al., 2025). In general, these models conceptualise organisational development as a progression from initial or ad hoc conditions towards increasingly defined, managed, controlled, and optimised states. Two broad forms can be distinguished within the maturity literature. Stage-based models classify organisations according to a sequence of progressively higher maturity levels, whereas dimension-based models assess maturity across multiple capability domains or organisational dimensions (Proença & Borbinha, 2016). Within the sustainability field, maturity models have also been developed to assess areas such as corporate sustainability management, sustainable supply chain management, and environmental management systems (Baumgartner & Ebner, 2010).

Despite their analytical usefulness, conventional maturity models tend to rest on assumptions that limit their applicability to sustainable business model transformation. In particular, they commonly portray organisational development as relatively orderly and progressive, place considerable emphasis on the strengthening of internal process capabilities, and treat development as broadly separable from the specific context in which an organisation operates. These assumptions do not adequately reflect the nature of sustainable business model transformation. Such transformation frequently emerges in response to uneven external economic pressures, takes different forms according to the characteristics of particular industries and institutional environments, and requires changes to the strategic logic of the business model rather than being confined to improvements in operational processes. Consequently, existing maturity frameworks provide useful foundations for conceptualising developmental progression, but cannot be directly applied to sustainable business model transformation without addressing its context-dependent, economically driven, and strategically reconfigurative character.

Economic Imperative

The economic imperative perspective conceptualises sustainability not as a source of business cost alone, but as a potential driver of competitive advantage and long-term value creation. Hart (1995) natural resource-based perspective proposed that firms can derive competitive advantages from pollution prevention, product stewardship, and the development of new markets. These sources of advantage may arise through lower operating costs, differentiated products, and access to emerging market opportunities. Hart further argued that appropriately designed environmental standards can stimulate innovation, improve resource productivity, and enable firms to offset the costs associated with regulatory compliance. Similarly, the shared value perspective emphasises that addressing societal needs can simultaneously generate economic value for firms (Porter, 2011). The triple bottom line model likewise highlights the importance of balancing economic, environmental, and social performance in organisational decision-making (Elkington & Rowlands, 1999). Collectively, these perspectives challenge the assumption that sustainability necessarily constrains business

performance and instead demonstrate that, when effectively embedded within corporate strategy, it can constitute a foundation for competitive advantage.

Nevertheless, an important conceptual deficiency remains. Existing economic perspectives provide limited explanation of how the integration of sustainability into business strategy develops and changes over time, particularly once sustainability assumes substantive economic significance. They therefore offer insufficient conceptual grounding for explaining why a "maturity" perspective becomes necessary to understand the progression of sustainable business model transformation. When these theoretical perspectives are considered collectively, a broader conceptual gap becomes apparent. Existing research helps explain why firms face sustainability pressures, how organisations can respond through adaptive capabilities, and how developmental progress can be assessed in principle. However, it does not adequately resolve three fundamental issues: why sustainable business model transformation should be conceptualised as an economic necessity; why static, binary, and event-based analytical perspectives become insufficient once sustainability acquires a substantive economic role; and what fundamental theoretical conditions a maturity perspective must satisfy to provide meaningful analytical value.

This article seeks to address this broader conceptual gap by developing a theoretical foundation for understanding sustainable business model transformation from a maturity perspective, rather than attempting to construct a complete maturity model or assessment system. The need for such an integrative foundation has become increasingly important as sustainability-related pressures intensify across industries and geographical contexts. Firms require not only an understanding of what sustainable business model transformation entails, but also a clearer basis for interpreting how such transformation develops and progresses. By integrating insights from the complementary theoretical perspectives discussed above, this paper establishes a conceptual foundation that can inform subsequent theoretical development, empirical investigation, and practical application in this increasingly important field.

METHODOLOGY

This article employs an integrative literature review and theoretical synthesis approach to develop a conceptual foundation for examining sustainable business model transformation through a maturity perspective. Theoretical synthesis involves combining insights from multiple theoretical perspectives to address research questions that cannot be adequately explained by any single theory considered in isolation (Jaakkola, 2020). Such an approach is particularly appropriate for complex phenomena such as business model transformation, which extends across multiple analytical levels and involves the interaction of several underlying causal mechanisms.

Theory Synthesis Approach

The theoretical synthesis was developed through a systematic integration of the relevant

perspectives. The first stage involved identifying three theoretical domains that are directly applicable to sustainable business model transformation: institutional theory, which explains the origins of pressures for organisational restructuring; dynamic capabilities theory, which accounts for the mechanisms through which organisations adapt; and maturity model literature, which provides a framework for understanding developmental progression. The second stage focused on examining the principal constructs, boundary conditions, and explanatory scope associated with each perspective, thereby identifying areas of complementarity as well as unresolved theoretical gaps. In the third stage, the central conceptual relationships emerging from the reviewed literature were clarified and integrated to establish a coherent theoretical foundation for examining sustainable business model transformation through a maturity perspective.

This approach follows established principles of theory synthesis within management research. The process began with a comprehensive examination of the literature across the three theoretical domains, through which their principal contributions, limitations, and potential points of integration were identified. This was followed by an iterative process of conceptual integration, involving repeated examination of the relationships and structures proposed within the relevant literature. Attention was given to identifying complementary explanations, theoretical inconsistencies, and areas where existing perspectives offered insufficient explanatory coverage.

The resulting synthesis demonstrates that no single theoretical perspective can adequately explain sustainable business model transformation, although each contributes an essential component to its explanation. Institutional theory accounts for the origins and transmission of pressures that encourage restructuring but provides limited insight into how the resulting transformation unfolds. Dynamic capabilities theory explains the mechanisms through which organisational adaptation and reconfiguration occur yet offers less explanation of the external pressures that initiate these processes. Maturity models, meanwhile, provide mechanisms for evaluating developmental states but generally offer limited theoretical explanation of the processes through which maturity emerges. Bringing these perspectives together therefore enables a more comprehensive causal explanation, connecting externality-related pressures to organisational capabilities, progressive business model reconfiguration, maturity development, and ultimately the long-term viability outcomes associated with sustainable transformation.

Process of Conceptual Development

The conceptual development proceeded through a series of interconnected stages. The first involved a review of the relevant literature to identify the principal conceptual relationships required to understand sustainable business model transformation as sustainability assumes increasing economic significance. The review indicated the need

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for an analytical perspective capable of capturing the progressive development of several interdependent dimensions throughout the transformation process, rather than reducing the phenomenon to a single variable, a binary condition, or an isolated innovation event.

The objective was not to prescribe a definitive meaning or specific content for "maturity". Instead, the analysis sought to establish the minimum conceptual conditions required for a maturity perspective to possess analytical value. Accordingly, the focus was placed on determining what a maturity-oriented perspective must be capable of explaining in order to provide meaningful insight into sustainable business model transformation. The analysis subsequently examined the relationships among the principal theoretical streams and four interconnected elements: the internalisation of externalities, strategic adjustment, developmental evolution, and long-term sustainability. The integrated analysis indicates that sustainable business model transformation cannot be adequately represented through individual variables or discrete events because the process develops progressively over time and encompasses multiple interconnected components of the business model. Changes introduced in response to sustainability pressures within one component can generate consequential adjustments elsewhere in the organisational system. For example, when firms encounter increasing demands for sustainable development, modifications to particular elements of their business models may subsequently affect related dimensions of value creation, value delivery, value capture, and organisational coordination. Transformation is therefore better understood as an evolving and interconnected process rather than as an isolated organisational intervention.

The final stage of the conceptual development brought these relationships together to formulate a set of core conceptual theses. These theses connect the internalisation of externalities with the emergence of substantive economic consequences, explain why such consequences necessitate a maturity perspective, and establish the relevance of this perspective to the long-term viability of firms. The resulting synthesis provides the basis for the central conceptual claims advanced in this article concerning the economic substance of sustainability, the limitations of existing analytical perspectives, the conceptual necessity of a maturity perspective, and its theoretical significance for understanding firms' long-term survival and viability.

Boundary Conditions

This conceptual perspective is subject to several boundary conditions that delimit its scope and applicability. First, the argument is most relevant to firms operating within institutional and market environments where environmental and social externalities have already been internalised or are likely to become internalised over time. Where such pressures are absent, the explanatory value of the proposed perspective is correspondingly reduced. The argument also assumes that firms possess a certain degree

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of strategic autonomy. Although institutional and economic pressures may constrain the range of available choices, firms are not necessarily required to respond to those pressures in identical ways. Accordingly, the analysis focuses on substantive changes to the underlying business model rather than minor modifications confined to individual organisational activities.

The intensity and direction of transformation may also vary according to industry-specific conditions. For example, mandatory pressures are likely to be more pronounced in highly regulated industries, whereas normative pressures may carry greater weight in sectors characterised by direct consumer engagement. Similarly, firms with greater reputational exposure or heightened vulnerability to environmental risks may attract more extensive scrutiny from stakeholders. Such contextual conditions can influence the form, intensity, and pace of business model transformation without undermining the fundamental logic of the proposed analysis. The framework further assumes that firms possess, or can acquire, at least a minimum level of resources and organisational flexibility required to undertake such transformation. Where resources are severely constrained or short-term competitive pressures are particularly intense, firms may have limited capacity to commit to long-term business model transformation. In accordance with these boundaries, this article confines its contribution to establishing the conceptual framework and identifying the minimum theoretical requirements for a maturity perspective. It does not seek to prescribe maturity dimensions, levels, stages, scoring mechanisms, or diagnostic instruments.

RESULT AND DISCUSSION

This section examines the conceptual foundations underlying organisational change by establishing a theoretical basis for reconceptualising sustainability as a strategic necessity rather than a voluntary organisational initiative. It considers the implications of this shift for management and emphasises the need for firms to align their strategic responses with the underlying mechanisms that shape institutional viability within an evolving economic environment.

Conceptual Foundation for a Maturity Perspective

This section begins by reconceptualising sustainable business model transformation as something more fundamental than a corporate social responsibility initiative. Rather, it is presented as a strategic adjustment that firms increasingly need to undertake as environmental and social externalities are progressively internalised. This reframing has important implications for how the transformation process should be understood and analysed. The central question consequently shifts from whether firms should pursue sustainable development strategies to how they can reconfigure their business models to preserve organisational viability as sustainability-related pressures acquire increasing economic significance.

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This interpretation is consistent with the economic imperative perspective while extending it by explaining the mechanisms through which externality internalisation can generate business model restructuring. Transformation should not be understood as a discrete or one-off organisational event. Instead, it represents an ongoing process of adjustment in which firms respond to external pressures that become progressively more economically consequential and dynamically changing. As this transformation advances, sustainability becomes increasingly embedded within the firm's core business model in a manner that is deeper, more coherent, and more enduring.

The conceptual logic underpinning this analysis is summarised in Figure 1. The figure illustrates how the internalisation of environmental and social externalities gives sustainability substantive economic significance and, consequently, makes sustainable business model transformation an increasingly necessary economic response. Once this occurs, conventional static, binary, and event-based perspectives become inadequate for capturing the depth, duration, and developmental trajectory of the transformation. A maturity perspective is therefore conceptually required, with its analytical significance deriving from its theoretical capacity to connect the progressive development of sustainable business model transformation with firms' long-term viability and survival.

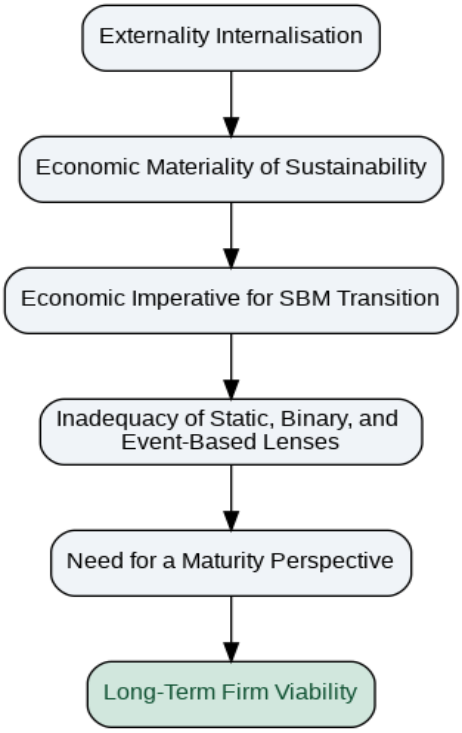

Figure 1: Conceptual Logic of the Maturity Perspective on Sustainable Business Model Transition

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BASIC CONSTRUCTS AND DEFINITIONS

Externality Internalisation Pressures

These pressures arise through the incorporation of costs or benefits that were previously excluded from market transactions into firms' economic decision-making. They emerge through regulatory requirements, such as carbon pricing and extended producer responsibility; market mechanisms, including consumer demand for sustainable products and green premiums; capital allocation practices, such as ESG integration and sustainability-linked financing; and stakeholder expectations, including supply chain requirements and social licence expectations.

Sustainable Business Model Transformation

This concept denotes the ongoing, multi-dimensional process through which firms reconfigure their dominant business models in response to the increasingly consequential economic implications of sustainability.

Dynamic Capabilities

Dynamic capabilities denote the organisational capacity to identify sustainability-related opportunities and threats, respond to them through strategic action, and reconfigure organisational resources and practices so that the firm remains aligned with a changing external environment. Within the sustainability context, these capabilities encompass environmental scanning, stakeholder engagement, green innovation management, and the implementation of circular economy practices.

Sustainable Business Model Maturity

Sustainable business model maturity refers to the progressive integration of sustainability into the core business model in a manner that becomes increasingly deep, consistent, and enduring. A higher level of maturity is reflected when sustainability is embedded across the business model through coordinated and mutually reinforcing relationships, rather than being restricted to isolated initiatives or peripheral activities.

Long-Term Viability

Long-term viability refers to the capacity of a firm to survive and prosper over an extended period. It encompasses both defensive and offensive dimensions. The defensive dimension concerns the firm's ability to reduce vulnerability to externality-related shocks, regulatory non-adherence, and reputational damage. The offensive dimension relates to its capacity to exploit opportunities generated by sustainability transitions, including access to emerging markets, differentiated products, and more favourable financing opportunities.

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Conceptual Justification for a Maturity Perspective

A maturity perspective becomes necessary because, once sustainability assumes substantive economic significance, sustainable business model transformation develops structural characteristics that cannot be adequately represented through static, binary, or event-based approaches. First, transformation has an extended temporal dimension, unfolding progressively over several years rather than occurring as a single event or existing as a fixed organisational state. Second, it is inherently multi-dimensional, affecting several interconnected elements associated with value formulation, value creation, value delivery, and value capture. Third, transformation is uneven and path dependent. Firms may progress at different rates across different dimensions, experience temporary imbalances, and face future developmental constraints arising from choices made during earlier stages of adaptation. These characteristics make "maturity" a particularly appropriate conceptual lens through which to examine the progressive development of sustainable business model transformation.

Conceptual Theses

This article advances three conceptual theses that establish the theoretical relationship between the internalization of externalities, the development of sustainable business model maturity, and firms' long-term viability.

Thesis 1. Externality Internalisation Constitutes an Economic Imperative

As environmental and social externalities are progressively internalized through regulatory oversight, capital allocation, information disclosure mechanisms, supply chain governance, and market constraints, sustainable business model transformation increasingly moves beyond the domain of voluntary choice or normative expectation and becomes an economic necessity with implications for firms' costs, risk exposure, and competitive positioning (Lecocq et al., 2023). This proposition establishes the conceptual link between externality-related pressures and the need for business model transformation.

The mechanisms underlying this relationship operate through several interconnected economic channels. Regulatory pressures can alter the cost structure of established business models by generating compliance costs and penalties associated with non-compliance (Xi, 2024). Market pressures can reshape demand towards sustainable products and consequently affect firms' revenue-generating potential. Capital market pressures may increase the cost of capital for firms with weak sustainability performance while improving financing accessibility for firms demonstrating stronger sustainability performance. Taken together, these pressures modify the economic calculus underlying business model decisions, potentially reducing the viability of established models while increasing the attractiveness of more sustainable alternatives.

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The intensity and timing of these pressures are not uniform across industries or geographical contexts. Firms that move early in responding to sustainability pressures may initially benefit from relatively weak competitive and institutional pressures and, as these pressures intensify, may subsequently gain advantages from their earlier adjustment. Later entrants, by contrast, may encounter stronger pressures while having less time in which to undertake the necessary transformation. Understanding these temporal differences is therefore important for managers and policymakers seeking to facilitate effective sustainable business model transitions.

Thesis 2. Existing Lenses Are Inadequate; Transition Requires a Maturity Perspective

Once sustainable business model transformation acquires substantive economic significance, conventional static, binary, and event-based perspectives become inadequate for explaining its depth, persistence, and developmental trajectory. A maturity perspective is therefore conceptually indispensable. Static representations can describe the configuration of a business model at a particular point in time, but cannot adequately capture the manner in which that configuration develops and changes over time (Geissdoerfer et al., 2018). Binary classifications conceal uneven patterns of development, while event-based accounts of innovation tend to understate the extended temporal dimension and path dependence of transformation (Lüdeke-Freund et al., 2016).

Dynamic capabilities remain relevant as a complementary explanatory perspective because they help account for how firms sense, interpret, and respond to sustainability-related pressures. However, dynamic capabilities theory alone does not fully explain the broader developmental trajectory through which business model transformation unfolds (Teece, 2022; Teece, 2007). The maturity perspective is therefore required to capture the temporal, multi-dimensional, uneven, and evolving characteristics of sustainable business model transformation as the economic significance of sustainability becomes increasingly pronounced.

Thesis 3. Maturity is Theoretically Linked to Long-Term Viability

A deeper, more consistent, and more enduring integration of sustainability into the core business model is theoretically associated with stronger long-term viability. Higher maturity should not be interpreted simply as the accumulation of separate sustainable development initiatives. Rather, it represents the extent to which sustainability becomes progressively and coherently embedded within the fundamental business model of the firm. Its significance therefore depends on the degree to which sustainability becomes an intrinsic element of the firm's logic for creating, delivering, and capturing value rather than remaining peripheral to core strategic decision-making.

From this perspective, maturity reflects the progressive development of internal

consistency among a firm's sustainability commitments, resource allocation decisions, operational arrangements, and broader strategic direction. A firm cannot be regarded as having achieved a mature sustainable business model if sustainability remains confined to organisational aspirations or external communication without being reflected in the routines, investments, incentive structures, and decision-making processes that govern everyday activities. Conversely, when sustainability is incorporated persistently into the organisation and becomes aligned with the firm's underlying economic logic, it can provide a basis for responding to external pressures while simultaneously identifying and exploiting emerging opportunities. Maturity is therefore analytically important because it captures the extent to which sustainability has developed from a collection of isolated activities into a persistent, intrinsic, internally embedded, and continuously enacted characteristic of the business model itself (Uhrenholt et al., 2022).

The relationship between maturity and long-term viability operates primarily through two channels. The first concerns the reduction of vulnerability during periods of transformation, while the second involves strengthening the firm's capacity to capture opportunities arising from the increasing internalisation of externalities. Firms that embed sustainability more deeply, systematically, and persistently within their core business models are theoretically better positioned to withstand challenges associated with stricter regulatory requirements, reputational exposure, supply chain disruptions, and financing constraints. At the same time, such firms may be better equipped to exploit emerging opportunities associated with sustainability-oriented markets, differentiated products, favourable financing conditions, and evolving customer preferences.

Taken together, these three theses establish the conceptual sequence that underpins the article: the internalization of externalities gives sustainability substantive economic significance; this economic significance exposes the limitations of existing static, binary, and event-based perspectives; those limitations establish the conceptual necessity of a maturity perspective; and the development of maturity is theoretically connected to firms' capacity for long-term survival and viability.

DISCUSSION

Theoretical Contributions

First, this article reconceptualises business model transformation as an economic necessity that emerges as environmental and social externalities are progressively internalised. This shifts the analytical focus beyond questions of legality and compliance towards issues of competitiveness, organisational adaptability, and long-term viability. Existing scholarship commonly portrays maturity either as movement through a sequence of developmental stages or as the accumulation of discrete sustainable practices. In contrast, the present article argues that, once sustainability

acquires substantive economic significance, transformation should be understood in terms of its progressively more enduring, coherent, and integrated incorporation into the fundamental logic of the firm's business model. This reconceptualisation addresses an important limitation in the existing literature, which frequently concentrates on individual initiatives, pilot programmes, or descriptions of business model configurations without adequately accounting for the sustained process through which transformation develops.

Second, the paper provides a diagnostic basis for understanding why conventional analytical perspectives become insufficient once sustainability assumes substantive economic relevance. Static approaches can capture the configuration of a business model at a particular point in time, but they provide limited insight into how that configuration develops or changes. Similarly, binary classifications tend to conceal unevenness in the progression of transformation, while event-based accounts can understate both the duration and path dependence that characterise organisational change. Dynamic capabilities offer an important complementary perspective because they explain how firms' sense, interpret, and respond to sustainability-related pressures; however, they do not, by themselves, provide a comprehensive explanation of the full developmental trajectory of business model transformation. This observation helps connect explanations of macro-level institutional and economic pressures with firm-level adaptation processes without presenting the article as a complete theory of maturity.

Third, the article specifies the minimum theoretical conditions that an analytically useful maturity perspective must satisfy. In doing so, it establishes a conceptual foundation for subsequent research while deliberately avoiding the premature specification of dimensions, levels, indicators, or assessment mechanisms. The integrated analysis indicates that institutional theory is useful for explaining why firms encounter pressures to reorganise in response to sustainability-related developments, dynamic capabilities theory helps explain how firms adapt to those pressures, and maturity theory provides the basis for understanding why such development should be conceptualised as an evolving process rather than as a discrete organisational outcome. The purpose of the paper is therefore not to construct a complete maturity framework, but to establish the theoretical circumstances and requirements under which future maturity-oriented research can be developed more systematically and rigorously.

The broader significance of this integrated contribution lies in its ability to move beyond the partial explanations offered by individual theoretical perspectives concerning sustainable business model transformation. Although the article does not provide a detailed maturity framework, it establishes a theoretical basis for future research to examine the economic substance of sustainability, the processes through which business models transform, and the implications of such transformation for long-term organisational viability in a more coherent manner. Building on this foundation,

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subsequent studies can investigate the contextual conditions that facilitate or constrain meaningful transformation across different organisational, industrial, and institutional settings.

Practical Implications

The discussion also provides several practical implications for managers confronting the challenges associated with sustainable business model transformation. First, sustainability-related pressures should be understood as substantive economic considerations rather than being treated primarily as matters of compliance, financial reporting, or corporate reputation. Because transformation is multidimensional and may progress unevenly across different areas of the business model, managers should be cautious about relying on isolated interventions or overly simplified benchmarking approaches that assume uniformity, linear progression, or context-independent development. Although this article does not provide diagnostic tools, it highlights the need for managers to recognise the complexity, extended time horizon, and interdependence inherent in sustainable business model transformation.

Second, the analysis indicates that organisational adaptability is an essential condition for achieving substantive rather than fragmented progress. Firms are better positioned to respond effectively when they can identify emerging sustainability-related pressures, recognise associated opportunities, and translate these insights into organisational changes. Developing such adaptive capacity requires sustained managerial attention, appropriate allocation of organisational resources, and an ongoing commitment to learning. It should therefore be regarded as a continuing organisational capability rather than as a response that can be established through a single intervention. Third, the article emphasises the systemic character of business model transformation. Changes introduced within one component of a business model are likely to influence other interconnected components. Managers should therefore avoid treating sustainability as a collection of isolated initiatives or separating it from the broader logic through which the firm creates, delivers, and captures value. Greater coherence across the different elements of the business model can support more meaningful progress when these elements are adjusted in a coordinated manner over time.

This systemic orientation further suggests that sustainable transformation should not be managed as a series of disconnected projects. Where managers recognise the interdependence among business model components and implement changes incrementally while progressively integrating them into a coherent overall configuration, the resulting transformation is more likely to become durable. The emphasis is therefore not simply on the number of sustainability initiatives undertaken, but on the extent to which these initiatives collectively contribute to a consistent and evolving business model. Finally, the analysis underscores the critical role of boards of directors and senior executives in determining whether sustainability is treated as a

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strategic priority or relegated to a secondary organisational concern. Leadership commitment is particularly important when transformation extends over a prolonged period and requires firms to maintain organisational flexibility while coordinating activities across functional areas. Senior leadership must therefore provide the strategic direction, resources, and organisational alignment necessary to sustain transformation throughout its development.

Policy and Institutional Implications

Beyond the firm level, the analysis carries significant implications for policymakers and institutional actors seeking to accelerate sustainable transformation across different regulatory, capital market, and industry contexts. The discussion suggests that effective policy interventions should operate through several interconnected mechanisms rather than relying on a single channel of influence.

First, policy design should recognise that the internalisation of externalities can occur through multiple pathways. Regulatory instruments, including carbon pricing and extended producer responsibility, can create direct incentives for firms to reconsider and restructure their business models over time (Rosenbloom et al., 2020). Market-oriented instruments can influence patterns of demand through mechanisms such as green public procurement standards and sustainability disclosure requirements. At the capital market level, instruments such as green bonds and sustainability-linked lending can redirect financial flows towards more sustainable activities. A more effective policy mix can therefore be achieved by combining these instruments so that complementary pressures operate across regulatory, market, and financial channels.

Second, the pace of transformation can be strengthened through institutional support for organisational capability development. Government programmes that fund sustainability-oriented research, facilitate the adoption of green technologies, and provide training in sustainable management practices can help firms develop the dynamic capabilities required to respond constructively to external sustainability pressures. Industry associations and professional bodies can likewise contribute by establishing sustainability criteria, disseminating good practices, and facilitating knowledge exchange and peer learning among participating firms.

Third, policymakers should recognise that sustainable business model transformation is inherently developmental and requires time, with firms progressing towards greater maturity at different rates. Policy interventions should therefore combine immediate incentives for action with sustained support for longer-term capability development. Short-term regulatory requirements can create an impetus for compliance and initial adjustment, whereas investments in research infrastructure, workforce skills, and innovation ecosystems can establish the conditions required for continued organisational development. This combination of immediate pressure and long-term

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institutional support is more consistent with the progressive nature of sustainable business model transformation than policies focused exclusively on short-term compliance outcomes.

CONCLUSION

This paper reconceptualises the transition towards sustainable business models as an economic necessity arising from the progressive internalisation of environmental and social externalities. Drawing upon institutional theory, dynamic capabilities theory, and maturity model literature, it develops a theoretically grounded account of how firms navigate sustainability-related transformation and why some organisations may be better positioned than others to maintain long-term viability. The central argument is that, once sustainability assumes substantive economic significance, conventional static, binary, and event-based perspectives become inadequate for capturing the depth, persistence, and developmental trajectory of business model transformation. A maturity perspective is therefore conceptually necessary to explain this evolving process. On this basis, the paper establishes four minimum theoretical conditions that an analytically adequate maturity perspective must satisfy and advances three conceptual theses connecting the economic substance of sustainability, the development of organisational maturity, and firms' long-term survival and viability. The study consequently provides a conceptual foundation for future research concerned with maturity-oriented approaches to sustainable business model transformation. However, it deliberately stops short of defining specific maturity dimensions, levels, indicators, or assessment frameworks, leaving their subsequent development and empirical validation to future research.

LIMITATIONS AND FUTURE RESEARCH

The paper is conceptual and oriented towards theory formation; consequently, the proposed framework has not yet been supported through empirical validation. In addition, the article intentionally refrains from defining specific maturity dimensions, levels, indicators, or assessment mechanisms. Developing and empirically validating such a framework remains an important direction for future research and should be undertaken in accordance with the minimum theoretical conditions established in this study. The applicability of the proposed framework also represents a further limitation. The discussion is primarily oriented towards large, established firms operating in developed economies, leaving its relevance to small and medium-sized firms, organisations in emerging economies, and public and non-profit institutions insufficiently established. Future studies could therefore develop context-sensitive maturity frameworks and employ appropriate empirical research designs to test the conceptual theses advanced in this paper. Attention could be given to examining how industry characteristics, regulatory intensity, and exposure to capital market risks influence the relationship between maturity development and firms' long-term viability.

Qualitative case studies could provide deeper insight into how individual organisations navigate and overcome the transformation process, while quantitative studies using larger samples could empirically assess the relationship between maturity and organisational viability.

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