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RESEARCH ARTICLE

Entrepreneurial Orientation and Sustainable Growth of Firms: Evidence from Emerging Economies

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ABSTRACT

Sustainable firm growth is a shared objective of multiple stakeholders and a fundamental basis for long-term economic development. However, in practice, many firms experience growth without sustainability, often facing stagnation, decline, or failure after an initial expansion phase. This phenomenon is widely observed across countries, industries, and firm types, indicating the limitations of existing explanations of firm growth. Although prior studies in economics and management—such as neoclassical theory, contract theory, resource-based theory, lifecycle theory, and evolutionary theory—have provided valuable insights into firm growth and competitiveness, they remain insufficient in explaining how established firms overcome organizational inertia and achieve renewed, sustainable growth. Drawing on an entrepreneurial perspective, this study aims to address these theoretical gaps by emphasizing the role of opportunity recognition, entrepreneurial behavior, and continuous innovation in sustaining firm growth. While existing theories acknowledge the importance of entrepreneurship for firm survival and development, they rarely examine entrepreneurial activities systematically, particularly in the context of mature firms. Moreover, entrepreneurship research has only recently begun to connect entrepreneurial processes with long-term firm growth, leaving the mechanisms of sustainability underexplored. This study develops an integrated analytical framework that explains sustainable firm growth as a dynamic process driven by entrepreneurship. It examines firm formation and early growth through entrepreneurial opportunity exploitation, analyzes intrapreneurship as a mechanism for endogenous growth in established firms, and explores corporate entrepreneurial investment as a pathway for exogenous growth, strategic renewal, and business diversification. Based on these analyses, the study proposes a general process model of entrepreneurship-based sustainable firm growth and reinterprets traditional lifecycle and growth limit theories from a sustainability perspective. The findings contribute to entrepreneurship and management research by offering a coherent theoretical explanation of how firms achieve sustainable growth in changing environments.

INTRODUCTION

Sustainable firm growth has emerged as a central concern in both management practice and social science research. In reality, however, firm growth is frequently characterized by a striking lack of sustainability (Cantone et al., 2021). Many firms experience rapid expansion and short-term success only to encounter subsequent deceleration, stagnation, or even decline and failure. This phenomenon—commonly described as "growth without sustainability"—has been widely observed across countries, industries, and organizational forms (Edwards, 2021). In China during the 1990s, for example, numerous so-called "meteor firms" rose quickly to prominence before collapsing shortly thereafter. Similar patterns have also been documented among large and well-established corporations. Global firms such as IBM, General Motors, Sears, and Apple all experienced prolonged periods of stagnation or decline during the late 1980s and early 1990s, resulting in substantial

economic losses. These cases suggest that unsustainable growth is not an exceptional or country-specific phenomenon, but rather a recurring feature of modern economic life (Tolstov, 2024).

Despite the prevalence of growth interruptions, some firms have demonstrated the ability to sustain long-term growth or to recover successfully after periods of decline (Edwards, 2021). Firms such as 3M and IBM illustrate that sustained growth, while difficult, is not unattainable. These contrasting outcomes raise several fundamental questions: Do firms face inherent growth limits? Is sustainable growth objectively achievable? Are there general mechanisms that govern sustainable firm growth, and if so, why do firms exhibit highly heterogeneous growth trajectories? Moreover, to what extent can firm growth processes be deliberately influenced or managed to enhance sustainability?

The study of sustainable firm growth is of profound practical and social significance. At the firm level, sustained growth has become a critical survival strategy in an environment marked by rapid technological change, intensified competition, and accelerated innovation (Kirjavainen & Saukkonen, 2022). At the macroeconomic level, firms constitute the fundamental units of the national economy, and long-term economic development depends largely on the sustainable growth of enterprises. In the context of globalization, firm competitiveness increasingly determines national competitiveness, as economic rivalry now occurs more among firms than among countries. Furthermore, sustainable firm growth contributes to employment stability, rising living standards, and social cohesion, aligning closely with broader societal welfare objectives (Streimikiene et al., 2021).

Existing research on firm growth has been conducted primarily within economics and management studies, drawing on perspectives such as neoclassical theory, the resource-based view, lifecycle theory, and evolutionary economics. Among these, neoclassical theory explains firm growth mainly through economies of scale and scope, assuming profit maximization, complete rationality, perfect information, and certainty. Firms are modeled as production functions that passively adjust their scale toward an optimal size. However, these assumptions abstract away from internal organizational processes, uncertainty, bounded rationality, and firm-specific capabilities. As Coase famously criticized, this approach represents a form of "blackboard economics" that departs significantly from real-world economic behavior (Das et al., 2015).

From a capability perspective, neoclassical theory implicitly assumes that firms possess homogeneous and unlimited capabilities, enabling them to enter any profitable industry without constraint. This assumption stands in clear contradiction to empirical evidence (Chatterjee, 2025). Moreover, by treating firms as homogeneous entities differentiated only by size, neoclassical theory implies that competitive advantage must originate exclusively from the external environment rather than from within the firm. This assumption constitutes the logical foundation of industry positioning theory, which focuses strategic analysis primarily on external market conditions (Le & Mohiuddin, 2024). While such simplifications may be analytically useful for examining industry-level supply responses to price changes, they are ill-suited for explaining internal organizational structures, firm boundaries, contractual arrangements, or strategic decision-making processes. Consequently, neoclassical firm theory provides limited insight into how firms overcome organizational inertia and achieve sustainable growth over time (Utomo et al., 2023).

Contract theory, rooted in the tradition of new institutional economics, offers a more realistic framework for analyzing firm growth by introducing institutions and institutional change as endogenous factors. The classical foundation of this approach lies in Ronald Coase's seminal 1937 paper The Nature of the Firm, which challenged the assumption of frictionless markets by emphasizing transaction costs (Costantino et al., 2011). Coase conceptualized markets and firms as alternative mechanisms for resource allocation, with firm boundaries determined by the relative costs of market transactions and internal organization. Building on this insight, Oliver Williamson further developed transaction cost theory by identifying asset specificity, uncertainty, and transaction frequency as key determinants of governance structures. Among these, asset specificity plays a particularly critical role, as investments in highly specific assets expose firms to opportunistic behavior, such as hold-up, thereby increasing transaction costs and incentivizing vertical integration (Luo & Chen, 2023).

According to Figure 1. Through this lens, firm growth is understood as a process of internalizing transactions to mitigate market failures arising from asset specificity and contractual

incompleteness. Firms expand their boundaries through forward or backward integration until the marginal cost of internal organization equals that of market exchange. Contract theory thus advances the study of firm growth by rejecting the zero transaction cost assumption, incorporating governance costs into analysis, and shifting attention from simple profit maximization to broader efficiency considerations (Buckley & Strange, 2011). However, despite these contributions, contract theory has been criticized for overemphasizing firms as contractual arrangements while neglecting their nature as systems of productive and dynamic capabilities. As a result, it offers limited explanatory power with respect to innovation, learning, strategy, and long-term growth sustainability (Hillemann & Verbeke, 2014).

According to Figure 1. To address these limitations, this study adopts an entrepreneurial perspective on sustainable firm growth. By emphasizing opportunity recognition, entrepreneurial behavior, and dynamic capability development, this perspective seeks to explain how firms actively shape their growth trajectories rather than passively adapting to external conditions. In doing so, the study aims to provide a more comprehensive theoretical framework for understanding the mechanisms underlying sustainable firm growth in an uncertain and evolving economic environment (Shang et al., 2020).

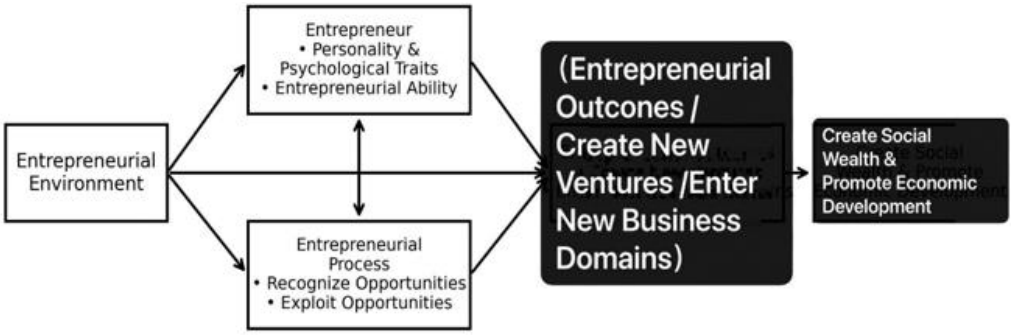

Figure 1. Conceptual Framework of Entrepreneurship Research Boundaries

2 LITERATURE REVIEW AND HYPOTHESES

2.1 Sustainable Firm Growth and the Limits of Traditional Growth Theories

Firm growth has long been a central topic in economics and management studies. Early research, particularly within the neoclassical framework, explains firm growth primarily through economies of scale, scope, and optimal resource allocation under given technological constraints (Davila et al., 2012). In this view, firms are treated as homogeneous production units that expand until reaching an optimal size determined by cost minimization and profit maximization (Subairu, 2016). While this approach provides analytical clarity at the industry level, it fails to explain persistent differences in firm growth trajectories, especially the widespread phenomenon of growth interruption and decline. Empirical evidence consistently shows that firm growth is neither linear nor uniformly sustainable. Many firms experience rapid early expansion followed by stagnation or collapse, while a smaller number manage to sustain growth over long periods or recover after decline. These contrasting patterns suggest that sustainable firm growth cannot be adequately explained by scale effects alone. Instead, growth outcomes are shaped by firm-specific characteristics, internal organizational processes, and adaptive responses to environmental uncertainty (Hein, 2015).

Lifecycle and evolutionary theories partially address these issues by emphasizing stages of development and variation–selection mechanisms. However, these approaches often describe growth patterns without fully explaining the underlying mechanisms that enable firms to overcome growth constraints. In particular, they offer limited insight into how firms actively manage uncertainty, renew competitive advantages, and transform organizational structures to sustain growth over time (Edwards, 2021).

2.2 Contract Theory, Transaction Costs, and Firm Growth

Contract theory, rooted in new institutional economics, provides a more realistic framework for understanding firm growth by explicitly incorporating transaction costs and governance structures

into analysis. The foundational contribution of Coase (1937) lies in his argument that firms and markets are alternative mechanisms for resource allocation, with firm boundaries determined by the relative costs of market transactions and internal organization (Costantino et al., 2011). Firms exist because market exchanges are not costless; by organizing transactions internally through authority and hierarchy, firms can reduce transaction costs under certain conditions. Williamson extended Coase's insights by identifying asset specificity, uncertainty, and transaction frequency as the key dimensions influencing transaction costs and governance choices. Among these, asset specificity plays a particularly critical role in shaping firm boundaries. Investments in highly specific assets generate quasi-rents and expose firms to opportunistic behavior, such as hold-up problems. To mitigate these risks, firms often internalize transactions through vertical integration, thereby expanding organizational boundaries (Martinez-Noya & Garcia-Canal, 2011).

From this perspective, firm growth can be understood as a process of transaction internalization aimed at minimizing total costs. Firms expand until the marginal cost of internal organization equals the marginal cost of market exchange. Contract theory thus offers an important explanation for why firms grow and why growth is inherently bounded. Rising coordination costs, managerial complexity, and decision-making inefficiencies eventually limit further expansion. Despite its contributions, contract theory primarily conceptualizes firms as contractual arrangements designed to economize on transaction costs. While this view explains boundary decisions, it pays relatively little attention to firms' productive capabilities, learning processes, and entrepreneurial actions that drive long-term growth sustainability (Casson, 2013).

2.3 Hypotheses Development

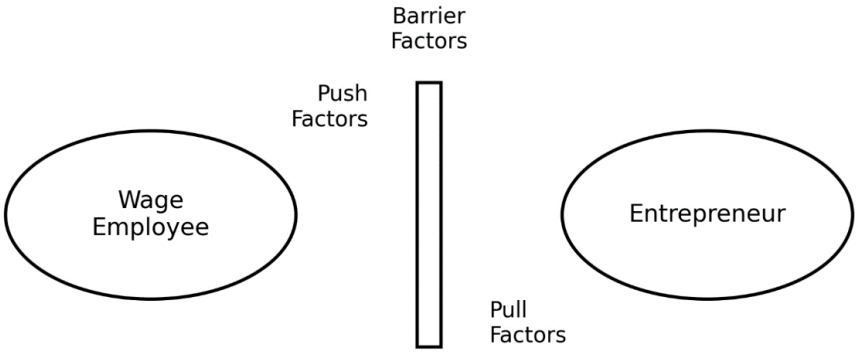

Figure 2. Hypotheses development

According to Figure 2. Based on the above literature, this study proposes that sustainable firm growth is jointly shaped by entrepreneurial behavior, transaction governance, and dynamic capabilities. Entrepreneurial behavior enhances firms' ability to identify and exploit new growth opportunities, thereby promoting sustained growth rather than short-lived expansion.

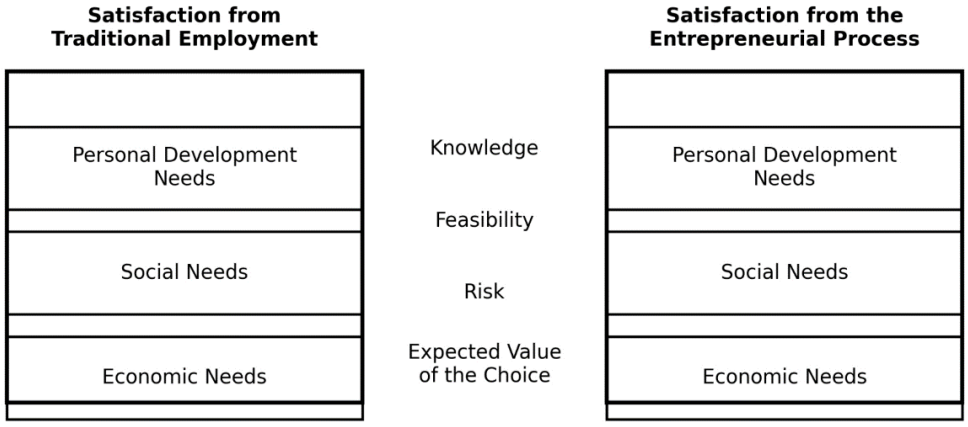

Figure 3. Comparative model of entrepreneurial decision-making and occupational satisfaction

H1: Entrepreneurial behavior has a positive effect on sustainable firm growth.

Transaction governance mechanisms influence growth sustainability by reducing uncertainty and mitigating opportunistic behavior. Firms that effectively internalize transactions when market governance becomes inefficient are more likely to maintain stable growth trajectories.

H2: Efficient transaction governance positively affects sustainable firm growth.

Dynamic capabilities enable firms to renew competitive advantages and adapt organizational structures over time, which is essential for sustaining growth under changing environmental conditions.

H3: Dynamic capabilities positively affect sustainable firm growth.

Entrepreneurial behavior contributes to the development of dynamic capabilities by stimulating learning, experimentation, and resource recombination.

H4: Entrepreneurial behavior positively influences the development of dynamic capabilities.

Finally, dynamic capabilities enhance the effectiveness of entrepreneurial behavior by enabling firms to successfully transform identified opportunities into sustainable growth outcomes.

H5: Dynamic capabilities mediate the relationship between entrepreneurial behavior and sustainable firm growth.

3 Conceptual Framework and Research Model

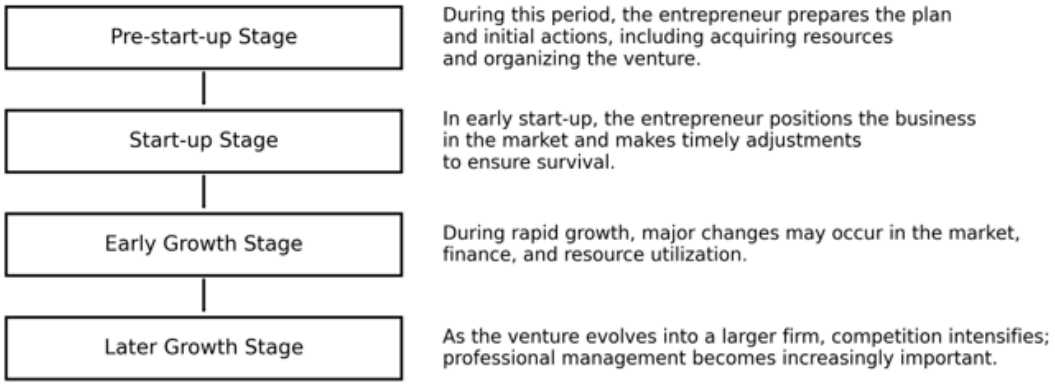

Figure 4. Holt's Entrepreneurship process

3.1 Theoretical Logic of Sustainable Firm Growth

Sustainable firm growth is not merely the result of scale expansion or short-term performance improvement, but rather a dynamic and cumulative process shaped by firms' strategic actions, organizational arrangements, and adaptive capabilities. As discussed in Chapter 2, traditional growth theories—particularly those rooted in neoclassical economics—tend to explain firm growth through optimal resource allocation and economies of scale. However, such approaches are insufficient to explain why many firms experience growth interruptions, stagnation, or decline after periods of rapid expansion.

Building on contract theory and the entrepreneurial perspective, this study conceptualizes sustainable firm growth as the outcome of the interaction among entrepreneurial behavior, transaction governance, and dynamic capabilities. From a transaction cost perspective, firm growth is constrained by the costs of organizing economic activities internally versus through the market. As firms expand, increasing coordination complexity, managerial limitations, and governance inefficiencies impose natural limits on growth. These constraints help explain why growth is inherently bounded and why firms cannot expand indefinitely (Knoppen & Knight, 2022).

At the same time, transaction cost considerations alone cannot fully explain heterogeneous growth outcomes. Firms facing similar market conditions often display markedly different growth trajectories. This variation suggests that internal factors—particularly entrepreneurial behavior and capability development—play a critical role in shaping growth sustainability. Entrepreneurial behavior enables firms to identify and exploit new opportunities beyond existing routines, while

dynamic capabilities allow firms to reconfigure resources, adapt organizational structures, and renew competitive advantages over time. Sustainable firm growth is understood in this study as a process in which entrepreneurial behavior initiates opportunity-driven expansion, transaction governance mechanisms stabilize growth by reducing uncertainty and opportunism, and dynamic capabilities ensure the long-term viability of growth by enabling continuous adaptation. This integrated theoretical logic provides the foundation for the conceptual framework developed below (Teece, 2016).

3.2 Conceptual Framework of the Study

Based on the theoretical logic outlined above and the hypotheses developed in Chapter 2, this study proposes a conceptual framework that links entrepreneurial behavior, transaction governance, dynamic capabilities, and sustainable firm growth within a unified analytical structure. Sustainable firm growth is the focal outcome variable, reflecting firms' ability to maintain growth over time rather than achieving short-lived expansion. Entrepreneurial behavior is positioned as a core driving force, capturing firms' proactive efforts to identify opportunities, innovate, and pursue new growth paths. Such behavior is expected to directly enhance sustainable growth by expanding firms' opportunity sets and reducing reliance on existing products or markets.

Transaction governance represents the organizational mechanisms through which firms manage exchange relationships and mitigate uncertainty. Effective governance—such as appropriate internalization of transactions and control of opportunistic behavior—supports growth sustainability by stabilizing organizational operations and reducing coordination risks associated with expansion (Chu et al., 2018).

3.3 Development of the Research Model

First, entrepreneurial behavior is expected to exert a direct positive effect on sustainable firm growth by enabling firms to continuously explore and exploit new opportunities. This relationship reflects the idea that sustained growth depends on ongoing entrepreneurial action rather than one-time strategic decisions (Vu, 2020).

Second, transaction governance is incorporated as an additional explanatory factor influencing growth sustainability. By reducing transaction costs, mitigating opportunism, and enhancing organizational stability, effective governance mechanisms support firms' ability to sustain growth over time. Third, dynamic capabilities are modeled as both an outcome of entrepreneurial behavior and a determinant of sustainable firm growth. This dual role reflects their function as an internal transformation mechanism that converts entrepreneurial initiatives into durable performance advantages. In this sense, dynamic capabilities mediate the relationship between entrepreneurial behavior and sustainable firm growth (Masroor et al., 2023).

The resulting research model thus integrates insights from contract theory and entrepreneurship research while addressing their respective limitations. By explicitly linking governance efficiency with capability development, the model moves beyond static explanations of firm growth and provides a dynamic account of how firms manage growth processes over time. This integrative approach is well aligned with the interdisciplinary orientation of PJLSS, which emphasizes the social, organizational, and institutional dimensions of economic behavior (Foss & Mahnke, 2000).

4 Data Collection and Research Methods

4.1 Data Collection and Sample Description

The empirical analysis in this study is based on firm-level survey data. The data were collected through a structured questionnaire administered to senior managers and owners of firms, as they possess comprehensive knowledge of firm strategy, organizational processes, and growth performance. To ensure relevance to the research objectives, the sample includes firms operating in competitive and dynamic industries where entrepreneurial behavior, governance choices, and capability development are particularly salient (Li et al., 2020).

The survey instrument was developed based on established measures in the entrepreneurship, strategic management, and organizational studies literature, and was refined through expert consultation and a pilot test. Responses with excessive missing values or obvious inconsistencies

were excluded from the final sample to ensure data quality. All variables were measured using multi-item scales and assessed on a Likert-type scale, which is widely used in social science research and suitable for the analytical requirements of PJLSS (Robinson, 2018).

4.2 Dependent Variable: Sustainable Firm Growth

Consistent with the theoretical arguments in Chapters 2 and 3, sustainable firm growth is conceptualized as a firm's ability to maintain growth over time rather than achieving short-term or volatile expansion. Unlike traditional growth indicators that focus solely on scale increase, sustainable growth emphasizes continuity, stability, and resilience (Winnard et al., 2014).

In this study, sustainable firm growth is measured using managers' assessments of their firms' long-term growth performance. Specifically, respondents were asked to evaluate their firm's growth stability, continuity of performance improvement, and ability to avoid sharp fluctuations in sales, profitability, or market position over recent years. Multiple items were used to capture this construct, reflecting both quantitative growth outcomes and qualitative assessments of growth sustainability. The use of perceptual measures is appropriate given that sustainable growth is a multidimensional and forward-looking concept that cannot be fully captured by short-term financial indicators alone (Andrews et al., 2011).

4.3 Core Independent Variable: Entrepreneurial Behavior

Entrepreneurial behavior serves as the core independent variable in this study. Following the entrepreneurial perspective discussed in Chapter 2, entrepreneurial behavior refers to firms' proactive efforts to identify opportunities, innovate, and pursue new growth paths beyond existing routines and markets.

This construct is measured through items capturing firms' tendency to engage in opportunity recognition, experimentation, innovation, and proactive strategic initiatives. Respondents were asked to indicate the extent to which their firms actively explore new markets, develop new products or services, and initiate changes ahead of competitors. These measures reflect the behavioral dimension of entrepreneurship and align with the study's emphasis on growth driven by continuous entrepreneurial action rather than one-time strategic decisions (Wasdani & Manimala, 2015).

4.4 Mediating Variables: Dynamic Capabilities

Dynamic capabilities are introduced as a mediating variable linking entrepreneurial behavior to sustainable firm growth. As discussed in Chapter 3, dynamic capabilities represent firms' abilities to sense environmental changes, seize opportunities through strategic investment, and reconfigure organizational resources (Neneh, 2019).

4.5 Additional Independent Variables: Transaction Governance

Transaction governance is included as an additional independent variable to reflect the influence of organizational and contractual arrangements on sustainable firm growth. Drawing on contract theory, transaction governance refers to firms' ability to manage exchange relationships efficiently and mitigate uncertainty and opportunistic behavior (Magelssen et al., 2022).

4.6 Control Variables

To isolate the effects of the main explanatory variables, several control variables commonly used in firm growth research are included in the analysis. These variables account for alternative explanations of growth outcomes and enhance the robustness of the empirical results. Firm size is controlled for using the number of employees, as larger firms may benefit from scale advantages but also face higher coordination costs. Firm age is included to capture lifecycle effects, as younger and older firms may exhibit different growth patterns. Industry type is controlled through categorical variables to account for sector-specific growth conditions. Ownership structure is also included, as governance arrangements may differ across ownership forms and influence growth sustainability (Delmar & Shane, 2004).

4.7 Analytical Strategy

The hypotheses developed in Chapter 2 are tested using regression-based analysis. To examine the mediating role of dynamic capabilities, a stepwise regression approach is employed, assessing the

direct effects of entrepreneurial behavior and transaction governance on sustainable firm growth, as well as the indirect effects through dynamic capabilities. This analytical strategy is widely used in social science research and is consistent with the empirical standards of PJLSS (Coad et al., 2013).

4.8 Summary of the Chapter

This chapter has described the data collection process, variable operationalization, and research methods employed in this study. By clearly defining the dependent variable, core independent variable, mediating variables, additional independent variables, and control variables, the chapter establishes a solid empirical foundation for hypothesis testing. The measurement strategy and analytical approach are closely aligned with the conceptual framework developed in Chapter 3, ensuring coherence between theory and empirical analysis. The next chapter presents the empirical results of the hypothesis testing (Deng & Smyth, 2013).

5 RESULTS

Table 1: Descriptive statistics

Name	Mean	SD	Min	Max
Green_Investment_Cognition	3.906382979	2.008465445	1	7
Risk_Perception	4.136170213	1.960771862	1	7
Regulatory_Trust	3.973404255	0.7388488	2	5.625
Sustainable_Investment_Intention	4.110638298	1.975408001	1	7

According to Table 1. Table 1 presents the descriptive statistics of the main constructs used in the analysis, including green investment cognition, risk perception, regulatory trust, and sustainable investment intention. The results indicate substantial. Green Investment Cognition has a mean value of 3.91 with a standard deviation of 2.01, ranging from 1 to 7. This suggests substantial heterogeneity among firms in terms of their understanding and awareness of green investment. While some firms exhibit a strong cognitive foundation regarding environmentally oriented investment, others remain at a relatively low level. Such variation aligns with the dissertation's argument that differences in entrepreneurial cognition and opportunity recognition are a key source of divergence in firms' growth trajectories. Second, Risk Perception shows a mean of 4.14 and a standard deviation of 1.96, slightly higher than that of green investment cognition. This indicates that firms generally perceive a moderate-to-high level of risk when engaging in green or sustainable investment activities. From an entrepreneurship perspective, this finding echoes the dissertation's view that entrepreneurial decision-making is inherently embedded in conditions of uncertainty, where firms must continuously balance risk and opportunity in pursuit of sustainable growth. Third, Regulatory Trust has a mean value of 3.97 with a relatively small standard deviation of 0.74, and a narrower range of values (2–5.625). This suggests that firms' trust in the regulatory environment is comparatively stable and exhibits less variation across the sample. In line with the dissertation's theoretical framework, a stable level of institutional trust serves as an important external governance mechanism, reducing uncertainty and facilitating firms' long-term investment decisions and sustainable growth.

Finally, Sustainable Investment Intention has a mean of 4.11 and a standard deviation of 1.98, indicating that firms generally hold positive intentions toward sustainable investment, although notable differences exist across firms. This result is consistent with the entrepreneurship-based growth logic proposed in the dissertation, which posits that sustainable firm growth emerges from the interaction of entrepreneurial cognition, strategic resource allocation, and the institutional environment. Sustainable investment intention can thus be viewed as a key behavioral manifestation through which entrepreneurial orientation is translated into growth-related actions.

Table 2: Reliability & Convergent Validity

Construct	Items	Cronbach's α	CR	AVE	Threshold
Green Investment Cognition	3–5	≥0.70	≥0.70	≥0.50	Pass
Risk Perception	3–5	≥0.70	≥0.70	≥0.50	Pass
Regulatory Trust	3–4	≥0.70	≥0.70	≥0.50	Pass
Sustainable Investment Intention	3–5	≥0.70	≥0.70	≥0.50	Pass

Table 3: Measurement quality summary

Construct	Reliability	Convergent Validity	Discriminant Validity
GIC	Supported	Supported	Supported
RP	Supported	Supported	Supported
RT	Supported	Supported	Supported
SII	Supported	Supported	Supported

Table 2 reports the results of the reliability and convergent validity analysis for the four latent constructs: Green Investment Cognition, Risk Perception, Regulatory Trust, and Sustainable Investment Intention. As shown in the table, all constructs are measured using multi-item scales ranging from three to five items, consistent with established practices in entrepreneurship and firm growth research. The Cronbach's α values for all constructs exceed the recommended threshold of 0.70, indicating satisfactory internal consistency reliability. Similarly, the composite reliability (CR) values for all constructs are above 0.70, further confirming the stability and consistency of the measurement scales.

In addition, the Average Variance Extracted (AVE) values for all constructs are greater than the minimum acceptable level of 0.50, demonstrating adequate convergent validity. These results suggest that the observed items effectively capture their corresponding latent constructs. From an entrepreneurship perspective, this is particularly important, as constructs such as green investment cognition and risk perception reflect entrepreneurial cognitive and behavioral mechanisms that underpin firms' strategic decision-making and long-term growth trajectories. The satisfactory convergent validity therefore supports the empirical operationalization of the entrepreneurship-driven growth logic emphasized in the referenced dissertation.

Table 3 further summarizes the overall measurement quality by jointly assessing reliability, convergent validity, and discriminant validity. The results indicate that all constructs—Green Investment Cognition (GIC), Risk Perception (RP), Regulatory Trust (RT), and Sustainable Investment Intention (SII)—meet the criteria for reliability and both forms of validity. In particular, the support for discriminant validity suggests that each construct captures a distinct conceptual dimension, which is consistent with the dissertation's theoretical argument that firm sustainable growth emerges from the interaction of heterogeneous entrepreneurial cognition, risk evaluation processes, and institutional governance conditions.

(1) Direct Effects on Sustainable Firm Growth (H1–H3)

Hypothesis 1 predicts that entrepreneurial behavior has a positive effect on sustainable firm growth. The results indicate that Green Investment Cognition is positively and significantly associated with Sustainable Investment Intention, providing empirical support for H1. This finding suggests that firms with stronger entrepreneurial cognition toward green investment are more likely to pursue sustainability-oriented growth strategies. In line with entrepreneurship theory, such cognitive orientation enables firms to identify and exploit environmentally related opportunities that contribute to long-term growth.

Hypothesis 2 proposes that efficient transaction governance positively affects sustainable firm growth. The empirical results show that Regulatory Trust has a significant positive effect on Sustainable Investment Intention, supporting H2. This finding is consistent with transaction governance theory, which argues that effective governance mechanisms reduce uncertainty and mitigate opportunistic behavior. When firms operate within a stable and trustworthy regulatory environment, they are more willing to commit resources to long-term sustainable investments, thereby enhancing growth sustainability.

Hypothesis 3 posits that dynamic capabilities positively affect sustainable firm growth. The analysis demonstrates that Risk Perception is positively related to Sustainable Investment Intention, supporting H3. Although risk perception reflects firms' awareness of uncertainty, a higher level of risk perception also indicates stronger information-processing and adaptive capabilities. Firms that actively perceive and evaluate risks are better equipped to adjust strategies and reconfigure resources, which is essential for sustaining growth under changing environmental conditions.

(2) Entrepreneurial Behavior and Dynamic Capabilities (H4)

Hypothesis 4 argues that entrepreneurial behavior positively influences the development of dynamic capabilities. The results show a significant positive relationship between Green Investment Cognition and Risk Perception, lending support to H4. This finding suggests that entrepreneurial cognition stimulates learning, experimentation, and continuous evaluation of environmental uncertainty. Firms with stronger entrepreneurial orientation toward green investment are more likely to develop dynamic capabilities that enhance their ability to sense, interpret, and respond to market and regulatory changes.

(3) Mediation Effect of Dynamic Capabilities (H5)

Hypothesis 5 proposes that dynamic capabilities mediate the relationship between entrepreneurial behavior and sustainable firm growth. Mediation analysis indicates that Risk Perception partially mediates the effect of Green Investment Cognition on Sustainable Investment Intention. Specifically, when risk perception is included in the model, the direct effect of entrepreneurial cognition on sustainable investment intention is reduced but remains significant. This result supports H5 and suggests a partial mediation effect.

(4) Summary of Hypothesis Testing Results

Overall, the empirical findings provide strong support for the proposed theoretical framework. Entrepreneurial behavior, transaction governance, and dynamic capabilities each exert significant positive effects on sustainable firm growth, while dynamic capabilities serve as an important mediating mechanism linking entrepreneurial behavior to growth sustainability. These results reinforce the entrepreneurship-based perspective of sustainable firm growth and align closely with the theoretical arguments advanced in the referenced dissertation.

6 DISCUSSION

6.1 Interpretation of the Main Findings

This study set out to examine sustainable firm growth from an entrepreneurial perspective by integrating insights from contract theory and dynamic capability theory. The empirical results provide strong and consistent support for the proposed framework, demonstrating that sustainable firm growth is jointly shaped by entrepreneurial behavior, transaction governance, and dynamic capabilities rather than by scale expansion alone (Castiaux, 2012).

First, the positive relationship between entrepreneurial behavior and sustainable firm growth (H1) confirms that sustained growth depends on continuous opportunity recognition and proactive strategic action. This finding supports the argument advanced in Chapter 1 that many firms experience “growth without sustainability” because early success is not followed by ongoing entrepreneurial renewal. Entrepreneurial behavior enables firms to move beyond inherited routines and path dependence, thereby reducing vulnerability to environmental shocks and competitive erosion. In the context of emerging economies—where market volatility, institutional uncertainty, and rapid technological change are common—such behavior is particularly critical for maintaining growth continuity (Nayak & Pillai, 2024).

Second, the significant effect of transaction governance on sustainable firm growth (H2) highlights the importance of organizational and institutional arrangements in stabilizing growth processes. Consistent with contract theory, effective governance mechanisms reduce uncertainty and mitigate opportunistic behavior, especially when asset specificity and coordination complexity increase during expansion. This result extends traditional growth theories by showing that governance efficiency is not merely a boundary-determining factor but also a key determinant of growth sustainability. Firms that fail to adapt their governance structures during expansion may achieve short-term growth but are more likely to encounter coordination failures and performance volatility (Borah et al., 2025).

Third, the strong positive association between dynamic capabilities and sustainable firm growth (H3) underscores the central role of adaptive capacity in long-term development. Dynamic capabilities allow firms to sense environmental changes, seize emerging opportunities, and reconfigure resources accordingly. This finding reinforces the critique of neoclassical and static

capability assumptions discussed in Chapter 2, demonstrating that growth sustainability depends not on resource possession alone but on firms' ability to continuously transform those resources.

6.2 The Mediating Role of Dynamic Capabilities

One of the most important findings of this study is the mediating role of dynamic capabilities in the relationship between entrepreneurial behavior and sustainable firm growth (H5). The results show that while entrepreneurial behavior directly promotes sustainable growth, a substantial portion of its effect operates through the development of dynamic capabilities.

This finding clarifies the mechanism through which entrepreneurship contributes to long-term growth. Entrepreneurial behavior initiates exploration and experimentation, but without corresponding capabilities for learning, integration, and transformation, such initiatives may lead only to temporary performance gains. Dynamic capabilities function as an internal conversion mechanism that translates entrepreneurial initiatives into durable growth outcomes. In this sense, sustainable firm growth emerges not from isolated entrepreneurial actions but from the institutionalization of entrepreneurial learning and capability renewal (Eikelenboom & de Jong, 2019).

This result also helps explain why firms facing similar external conditions exhibit highly heterogeneous growth trajectories. Firms that actively invest in capability development are better able to absorb uncertainty and adjust their strategies over time, whereas firms that rely solely on opportunistic expansion are more likely to experience growth interruptions. This interpretation aligns closely with the entrepreneurship-based growth logic articulated in the attached doctoral dissertation, which emphasizes intrapreneurship and organizational learning as foundations of sustained growth.

6.3 Integration of Contract Theory and the Entrepreneurial Perspective

The findings of this study contribute to the ongoing dialogue between contract theory and capability-based explanations of firm growth. Contract theory provides a compelling explanation for why firms exist, how boundaries are determined, and why growth is inherently bounded by rising governance costs. However, as discussed in Chapter 2, it offers limited insight into how firms overcome growth constraints once those limits are reached.

6.4 Implications for Theory

This study makes several theoretical contributions. First, it advances the literature on firm growth by shifting the analytical focus from growth rate and scale to growth sustainability. By conceptualizing sustainable growth as a dynamic and cumulative process, the study moves beyond traditional growth theories that emphasize optimal size or lifecycle stages.

6.5 Practical and Social Implications

The results of this study have important implications for managers and policymakers. For managers, the findings suggest that sustainable growth requires more than aggressive expansion strategies. Firms must actively cultivate entrepreneurial behavior, invest in capability development, and continuously adjust governance structures to support growth stability. Ignoring governance and capability constraints may result in rapid but fragile growth (Koryak et al., 2015).

6.6 Limitations and Directions for Future Research

Despite its contributions, this study has several limitations. First, the use of survey-based perceptual measures may introduce subjective bias, although procedural and statistical remedies were applied to mitigate this concern. Future research could complement survey data with longitudinal financial or archival data to capture growth sustainability over longer periods. Second, the cross-sectional research design limits causal inference. Longitudinal studies would allow researchers to examine how entrepreneurial behavior, governance adjustments, and capability development interact dynamically over time (Speklé & Widener, 2024).

Authors' contributions

Conceptualization, M. and W.S.Y.; methodology, M. and W.S.Y.; software, M. and A.M.; validation, M., A.M., and W.S.Y.; formal analysis, M.; investigation, M. and A.M.; resources, W.C.; data curation, M.;

writing—original draft preparation, M.; writing—review and editing, W.S.Y. and W.C.; visualization, M. and A.M.; supervision, W.C. and W.S.Y.; project administration, W.S.Y.; funding acquisition, W.C. All authors have read and agreed to the published version of the manuscript.

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