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THE FUSION OF MARKET AND FAMILIAL LOGICS: A THEORETICAL CONSTRUCTION OF INVENTOR CEO PARTICIPATION AND INNOVATION STRATEGIES IN CHINESE FAMILY BUSINESSES

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Abstract: This paper aims to construct a contextualized theoretical framework integrating institutional logic and upper echelons theory to explore how the hands-on involvement of inventor CEOs in Chinese family firms influences the balance between exploitative and exploratory innovation within the unique context of China's transitional economy. Focusing on the dynamic fusion process between market logic and familial logic in China, this study posits that such fusion forms distinctive mechanisms of "institutionalized compromise" and "strategic synergy" through practices such as intergenerational succession, governance structure evolution, and open innovation. This paper systematically develops a series of propositions elucidating (1) how hybrid governance models like "consortium + professional manager," driven by market logic, reshape the decision-making environment of inventor CEOs by introducing external capital and professional expertise, thereby moderating the impact of their involvement on innovation ambidexterity; (2) how intergenerational succession, constrained by the "socioemotional wealth" and driven by the "succession intention" inherent in familial logic, alters the participation paradigm and innovation orientation of founder-inventor CEOs through value integration and knowledge structure renewal; and (3) how the tension between the "openness" demanded by market logic and the "control" preferred by familial logic in open innovation contexts is moderated by formal governance mechanisms and intellectual property regimes. This research not only deepens the understanding of the contextualized drivers of CEO behavior but also provides a systematic theoretical explanation and managerial implications for Chinese family firms to achieve innovation leaps within institutional fusion.
Keywords: Inventor CEO; Hands-on involvement; Exploitative innovation; Exploratory innovation; Institutional fusion

1 INTRODUCTION

Against the backdrop of global innovation competition, the rise of Chinese private enterprises has become a notable "Chinese phenomenon." Technology-driven firms like Huawei, BYD, and CATL have achieved global technological breakthroughs and market success, often spearheaded by core leaders possessing deep technical backgrounds, strong founder traits, and distinctive personal leadership styles. This local practice engages in a cross-contextual dialogue with the emerging international research on "Inventor CEOs." Studies based on mature Western markets indicate that CEOs with hands-on inventive experience (e.g., holding patents) can significantly enhance corporate innovation output. However, their continued, direct engagement in innovation activities while in office (i.e., "hands-on involvement") may steer corporate innovation strategy towards "exploitative innovation," which refines existing knowledge, while inhibiting "exploratory innovation," which seeks entirely new possibilities[1,2]. This finding reveals the complexity of the inventor CEO's influence, yet its theoretical construction is rooted in the relatively stable, homogeneous, and market-logic-dominated institutional environment of the West.

Directly transplanting this theory to the Chinese context presents profound challenges of "contextualization" and opportunities for theoretical expansion. In China's private economy, over 80% of firms adopt family ownership or management. Familial logic—emphasizing kinship trust, long-term orientation, preservation of socioemotional wealth (SEW), concentrated control, and business perpetuation—forms the deep-seated code for their governance and strategic decision-making[3]. Simultaneously, China's burgeoning capital markets, increasingly fierce global competition, national strategic expectations for "self-reliance and self-improvement" in science and technology, and the disruptive changes brought by the digital economy collectively constitute a powerful market logic—pursuing efficiency, profit, professional specialization, open competition, and contractualism. More critically, Chinese family firms do not statically oscillate between these two logics but are situated within a large-scale, systematic process of institutional fusion. Over the next decade, more than three million Chinese enterprises are expected to face intergenerational succession, involving assets worth tens of trillions of yuan. This "succession wave" is not merely a transfer of power within families but a pivotal historical moment for the deep collision, learning, and reconstruction between market logic (demanding professionalism, capitalization, and globalization) and familial logic (emphasizing kinship, control, emotion, and succession)[4].

Therefore, the core theoretical question this paper aims to address is: In the unique and rapidly changing context of the dynamic fusion between market and familial logics in China, how does the hands-on involvement of inventor CEOs in family firms influence the balance between exploitative and exploratory innovation? Through which key organizational

interfaces and process mechanisms do these two institutional logics systematically shape and moderate this relationship?

Addressing this question holds significant theoretical and practical importance. Theoretically, by integrating macro-level institutional logic perspectives with micro-level CEO behavior and meso-level organizational innovation strategy research, this study aims to break through the relatively static and de-contextualized limitations of existing inventor CEO research. It seeks to construct a middle-range theory capable of deeply explaining unique Chinese management phenomena with potential for international dialogue, thereby deepening and contextually extending upper echelons theory while vigorously advancing the application of institutional logic theory in the realm of micro-strategic behavior. Practically, this study aims to provide clear insights based on an institutional fusion perspective for Chinese family firm leaders, successors, boards of directors, and policymakers, aiding them in balancing continuity and innovation during succession, and reconciling control and growth amidst openness, thereby navigating cycles and achieving genuine longevity.

2 THEORETICAL BACKGROUND AND LITERATURE DIALOGUE

2.1 Theoretical Origins and Dialogue on Core Concepts

2.1.1 Inventor CEO and hands-on involvement

This paper focuses on "Inventor CEOs," defined as leaders who possess personal experience in technological invention or product development yielding substantive innovative outputs (e.g., patents) before or during their tenure as CEO. Our core focus is their "hands-on involvement," i.e., the CEO's continuous, direct engagement in the firm's technological innovation process while in office[1,2]. This goes beyond strategic advocacy, resource allocation, or symbolic support, manifesting concretely as deep leadership of R&D projects, authorship on core patents, and technical guidance and daily interaction with R&D teams. Such involvement reflects the CEO's obsession with technical details, the tight coupling of personal identity with the technological domain, and a strong desire to ensure the technology roadmap does not deviate from their cognitive path through personal intervention.

2.1.2 Innovation ambidexterity

The Perennial Tension Between Exploitation and Exploration: A central proposition in organizational learning and innovation theory is how firms balance "exploitation" and "exploration"[5]. Exploitative innovation refers to the refinement, extension, and efficiency improvement of existing knowledge, technologies, products, and markets, characterized by lower risk, predictable returns, and strong path dependency. Exploratory innovation refers to the search, experimentation, and radical breakthrough into new knowledge, technological trajectories, product markets, or entirely new business models, characterized by high risk, high uncertainty, long return cycles, but potential for paradigm shifts and long-term competitive advantage. These two types of activities are fundamentally contradictory in their goals, knowledge bases, organizational routines, and resource requirements. Managing this tension is a core challenge of strategic management[6]. In the context of Chinese family firms, this tension is further intertwined with the dual objectives of "short-term survival pressure" and "long-term business perpetuation" [7].

2.2 Inventor CEOs and Innovation Ambidexterity: Research Progress and Theoretical Divergence

Although the phenomenon of inventor CEOs is becoming increasingly common, research on how they influence corporate innovation ambidexterity is still in its infancy, with conclusions showing interesting divergences and dialogue spaces. The table 1 outlines the main research perspectives, core findings, and their implications for research in the Chinese context.

Table 1 Major Perspectives and Dialogue in Research on Inventor CEOs and Innovation Ambidexterity

Research Perspective	Core Argument/Finding	Representative Literature/Scholar	Implications for Chinese Family Firm Context
Cognitive Load & Path Dependence Perspective	The hands-on involvement of inventor CEOs tends to favor exploitative innovation due to cognitive overload, which leads them to choose less complex, less uncertain options. This tendency is reinforced by path dependence, especially for internally promoted (particularly founder) CEOs.	Reference [1],[2]	Directly points out the potential "innovation paradox" of hands-on involvement, providing a basic framework for analyzing the behavior of founder-CEOs in Chinese family firms.
Knowledge Structure & Complementary Capabilities Perspective	The composite knowledge background of the top management team (e.g., combining STEM and business) can effectively promote synergistic ambidexterity. TMT members with inventor backgrounds can provide critical advisory support to new CEOs, alleviating short-term pressures and supporting exploratory innovation.	Reference [8],[9]	Suggests focusing on the knowledge backgrounds and roles of other executives (e.g., family members, professional managers) in Chinese family firms beyond the CEO, as they may be key moderators of the CEO's involvement effect.

Exploration Promotion & Context-Dependence Perspective	A CEO's R&D background has a positive impact on both types of corporate ambidextrous innovation, and its effect on promoting exploratory innovation may be more significant; this effect is more pronounced in high-tech industries and during intensified market competition.	Reference [10]	Challenges the singular assertion that "inventor CEOs inevitably favor exploitation," suggesting the need for more nuanced analysis incorporating contextual factors such as industry characteristics and market environment.
Organizational Design & Collaboration Mode Perspective	Excessive internal collaboration may inhibit exploration; moderate isolation or asymmetric collaboration-knowledge structures (e.g., people with similar knowledge backgrounds not working together) can sometimes better stimulate breakthrough ideas.	Reference [11]	Offers new insights for how Chinese family firms can design R&D organizational structures (e.g., whether to establish independent innovation institutes, how to configure project teams) to balance the influence of CEO hands-on involvement.
Micro-Behavior & Motivational Integration Perspective	Whether exploration and exploitation activities compete or complement each other in their impact on radical innovation depends on the level of team learning behavior; attention must be paid to the motivational factors behind exploration (e.g., promotion focus).	Reference [12]	Lowers the level of analysis to team and individual motivation, suggesting we focus on the internal interaction quality and climate within R&D teams of Chinese family firms, which may be the micro-transmission mechanism through which CEO involvement exerts its influence.

The review in the table above reveals that existing research is shifting from initial "linear impact theory" toward more complex "contingency and process theory." In particular, the research by Zhu Jianjun and Chen Jiamei based on Chinese samples directly questions Harrison et al.'s conclusion from a contextual perspective, indicating that the influence of inventor CEOs may vary depending on the institutional environment, industry stage, and firm ownership[1,10]. This provides a direct theoretical entry point and basis for dialogue for this study's focus on the unique context of "market-familial" logic fusion in China. The hands-on involvement of inventor CEOs in Chinese family firms may be constrained by cognitive load and the conservatism of family control, yet it may also be motivated toward greater exploration due to their deep understanding of technology, strong long-term orientation, and ties to family reputation. This seemingly contradictory possibility precisely needs to be analyzed through the lens of institutional fusion.

2.3 The Unique Context of Market-Familial Logic Fusion in China

The survival and development of Chinese family firms are embedded in a complex institutional network woven from millennia of "family culture" tradition, modern social transformations, and contemporary market economic reforms.

2.3.1 Historical-cultural genes and the "differential mode of association"

The traditional Chinese societal characteristic of the "differential mode of association" has profoundly influenced the initial governance models of family firms[13]. This social network radiating from the "self" based on kinship and geographical proximity led Chinese family firms in their start-up phase to rely heavily on "informal governance" based on trust, affection, and tacit understanding[3]. Altruism and high trust within families significantly reduced transaction and collaboration costs, becoming a key advantage for firms to respond quickly to opportunities and mobilize resources in the early stages of market development when laws and regulations were underdeveloped [7]. This starting point differs markedly from Western governance based on an "organizational mode of association" and universal contracts.

2.3.2 Dynamic fusion process in a transitional economy

Since the reform and opening-up, Chinese family firms have undergone dramatic development from the periphery to the mainstream. Their industrial structure rapidly expanded from light manufacturing to real estate and infrastructure and is now leaping into strategic emerging industries like high-tech manufacturing, new energy, and biomedicine. This process reflects both the continuous penetration and deepening of market logic (manifested in the thirst for capital, talent, technology, and management professionalism) and the constant adaptation and reconstruction of familial logic to the new environment. Pure family closure or complete separation of ownership and management faces challenges of "acclimatization" in China, leading to the evolution of diverse hybrid forms in practice. For instance, the "family holding + professional manager operation" model attempts to retain control while introducing professional efficiency; the "consortium + family" alliance model attempts to fuse the strategic patience of industrial capital with the operational flexibility of family firms [14]. This fusion is not a simple substitution but an "institutionalized compromise" formed within specific governance arrangements, strategic decisions, and cultural practices.

2.3.3 Intergenerational succession as a key trigger for fusion

Intergenerational succession is a "living theater" for observing the conflict and fusion of the two logics. Unlike the "first-generation founders" who started from scratch, are deeply versed in China's political and business environment, and firmly believe in a "seeing is believing" control style, many "second-generation" or "third-generation" successors have overseas educational backgrounds, have been exposed to global cutting-edge technology and management concepts, and have internalized stronger market and professional logic[15]. The succession process is not merely the

transfer of business management rights but the collision and blending of two cognitive models, two types of social networks, and two sets of legitimacy criteria. Successful succession often means successfully grafting market-oriented governance systems and innovation genes while maintaining the core cohesion of the family.

In summary, the action field for inventor CEOs in Chinese family firms is a "fusion context" where market logic and familial logic are in continuous dialogue, game, and synergy. The CEO's hands-on involvement is both an expression of personal technical preference and a strategic behavior to cope with and leverage this institutional complexity. The following sections will construct a systematic theoretical framework to reveal how this fusion context moderates the impact of inventor CEO involvement on innovation ambidexterity through three key interfaces: governance structure, intergenerational succession, and open innovation.

3 THEORETICAL FRAMEWORK AND PROPOSITION DEVELOPMENT

Based on the contextual analysis above, this paper proposes an integrated theoretical framework (see Figure 1). The core argument of this framework is that in the context of China's transitional economy, market logic and familial logic do not statically coexist but are continuously engaged in dynamic fusion throughout the firm's life cycle. This fusion process unfolds concretely through three core organizational practice interfaces: governance structure, intergenerational succession, and open innovation. Each interface constitutes a "stage" for the inventor CEO's hands-on involvement. The degree and manner of fusion (competition, compromise, or synergy) between the two logics on each interface systematically shapes the motivation, constraints, and resource conditions of the CEO's involvement behavior, thereby moderating the strength and likelihood of this behavior ultimately leading to exploitative or exploratory innovation. This framework transcends the traditional approach of treating context as a simple background or moderating variable, viewing institutional fusion itself as an active, multi-interface process that transmits its influence on micro-strategic behavior and macro-innovation outcomes through these processes.

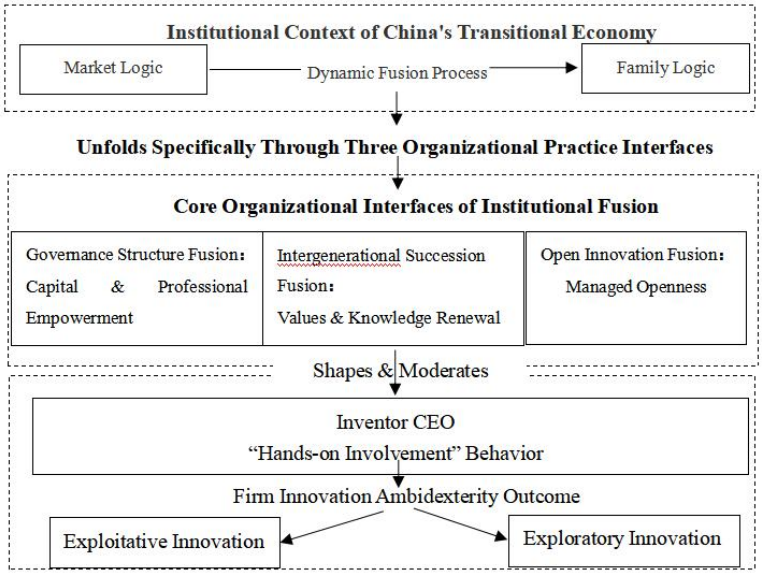

Figure 1 Integrated Theoretical Framework: How Market-Familial Logic Fusion Moderates the Impact of Inventor CEO Involvement on Innovation Ambidexterity

3.1 Proposition Set 1: The Moderating Role of Governance Structure Fusion—From "Family Control" to "Capital and Professional Empowerment"

When family firms actively innovate their governance structures in response to market competition and scale expansion, the introduced external elements (e.g., institutional capital, independent directors, professional managers) profoundly alter the power context and cognitive frame of reference within which the inventor CEO exercises hands-on involvement. The essence of fusion at this interface is the embedding and transformation of personalized control and authority-based governance under familial logic by contractual governance and professionalism under market logic.

P1a: The introduction of a hybrid governance model such as "consortium + professional manager" will weaken the tendency of a founder-inventor CEO's hands-on involvement to strengthen exploitative innovation. The entry of consortium capital (especially long-term capital with an industrial background) brings strategic patience and additional resource buffers that extend beyond a single family cycle, reducing absolute dependence on short-term cash flow and certain returns[14]. Simultaneously, the professional manager team shares complex day-to-day operational responsibilities, partially freeing the CEO from the "cognitive overload" problem noted by Harrison et al.[1]. This shift may allow the CEO's hands-on involvement to move from a "firefighter" mode compelled to tackle specific operational technical problems toward a "chief scientist" mode with more capacity to focus on forward-looking, fundamental technical issues, thereby creating cognitive space for exploration. This logic aligns with Kim and Lee's finding that

inventor TMT members can provide advisory support and alleviate CEO pressure[9].

P1b: The strength and direction of the above weakening effect are subject to secondary moderation by the nature of capital and board professionalism. If the capital introduced is financial capital seeking short-term returns, its pressure may instead force the CEO to use hands-on involvement to rapidly generate quantifiable improvement outcomes (strengthening exploitation). If it is "strategic capital" with an industrial synergy vision, it may guide the CEO's involvement toward incremental innovation related to the core business. More importantly, a truly professional and diverse board (especially independent directors with technical or strategic backgrounds) can provide the CEO with high-quality external information, constructive challenges, and checks on potential technological path dependence, thereby more effectively directing the CEO's attention and involvement toward exploratory domains [2].

P1c: In the context of a succeeding "second-generation" inventor CEO, if their succession is accompanied by the establishment of institutional tools such as family trusts or family offices, it indicates that familial logic itself has begun to incorporate the formalized forms of market logic. This "institutionalized fusion" provides clear rules frameworks and risk boundaries for the second-generation CEO's hands-on involvement. Their involvement is more likely to manifest as the systematic promotion of strategic exploratory projects aligned with long-term market trends within the established governance rules, rather than the arbitrary, all-encompassing intervention characteristic of first-generation founders based on personal authority and preference. In this scenario, the composite knowledge structure of the top management team will play a more important role, complementing the CEO's technical expertise to jointly promote ambidextrous innovation[8].

3.2 Proposition Set 2: The Fusion of Values and Knowledge in Intergenerational Succession—From "Authority of Experience" to "Entrepreneurial Succession"

Intergenerational succession is the "crucible" where the two logics collide head-on, and emotion and rationality clash fiercely. It is also a critical juncture where a firm's innovation orientation may shift or fracture. The core of fusion at this interface is the transfer, renewal, and recombination of knowledge structures, risk preferences, and sources of legitimacy across generations.

P2a: Compared to "first-generation founder" inventor CEOs who experienced resource scarcity and market infancy, are highly risk-sensitive, and whose authority is deeply rooted in past success, "second-generation" inventor CEOs with overseas STEM education backgrounds, steeped in global innovation culture, and advocating data-driven and open innovation methods are more likely to promote exploratory innovation through their hands-on involvement. They bring the global technological perspective, scientific methodology, and entrepreneurial spirit inherent in market logic into the firm. Their technical involvement itself becomes a key channel for importing new cognitive frameworks and challenging existing technological paradigms within the organization [15]. This finding, to some extent, supports Zhu Jianjun and Chen Jiamei's discovery that a CEO's R&D background promotes exploration and clarifies "generational transition" as an important boundary condition[10].

P2b: However, the promoting effect of a second-generation CEO's hands-on involvement on exploration is strongly constrained by familial concerns for socioemotional wealth. When exploratory projects are perceived to potentially severely dilute family control (e.g., requiring large-scale external equity financing), endanger the firm's survival foundation ("survival" as a short-term priority), or conflict with core family values, familial logic exerts a powerful "braking effect"[16]. This constraint may stem directly from parental intervention or may have been internalized as a prudent trade-off in the second-generation CEO's own decision-making. This tension may lead the second-generation CEO's hands-on involvement to manifest as "selective exploration," i.e., deep involvement only in specific domains deemed by the family as risk-controllable or aligned with long-term family reputation.

P2c: Successful fusion is embodied in the "entrepreneurial succession" model [15]. Here, the parent generation (as guardians of familial logic and traditional authority) provides resources, brand endorsement, and political shelter, creating a "protected space for exploration" (e.g., an independently accounted new business division, a subsidiary focused on cutting-edge technology, or an innovation incubator). Within this space, the second-generation CEO (as a carrier of market logic and new technological paradigms) is granted sufficient autonomy for hands-on innovation experimentation. This model ingeniously transforms the successor's involvement into a mechanism for exploration under controlled risk, achieving a virtuous cycle of "entrepreneurship within succession, succession within entrepreneurship." From an organizational design perspective, this essentially creates a moderately isolated space for exploration [11], shielding it from the erosion of the mainstream organization's exploitative inertia, and is a model of creative combination of the two logics.

3.3 Proposition Set 3: Tension and Synergy in Open Innovation—From "Closed Innovation" to "Managed Openness"

Open innovation is an inevitable strategic choice for firms responding to rapid technological iteration and competitive pressures under market logic, yet it inherently conflicts with familial logic's preference for secrecy of core knowledge and exclusivity of control. The key to fusion at this interface lies in establishing a set of governance rules that balance the benefits of openness with the risks of losing control.

P3a: In family firms, the hands-on involvement of an inventor CEO casts them in the dual role of "technical gatekeeper" and "risk filter" for open innovation. On one hand, their profound technical expertise helps accurately

identify and assess the technical value of external (market-type) partners (e.g., lead users, suppliers). On the other hand, their strong control consciousness and SEW concerns lead them, when leading cooperative R&D, to tend to strictly limit cooperation to solving existing product technical bottlenecks, dominate the cooperation process, and steer outcomes toward improvements of existing products (exploitative innovation), rather than engaging in equal, high-risk co-exploration of entirely new domains. This reflects the instinctive caution of familial logic toward open exploration under market logic in the absence of sufficient safeguards.

P3b: Cooperation with science-type partners (e.g., universities, national research institutes) can partially alleviate the above tension. Such cooperation typically has a stronger exploratory nature, less direct commercial competitiveness, and often enjoys higher social reputation and policy support, aligning better with the long-term orientation and social image-building needs of family firms. An inventor CEO's hands-on participation in such cooperation (e.g., joint laboratories, postdoctoral training) can more effectively promote exploratory innovation, especially when the cooperation aligns with national strategic directions, granting it higher legitimacy and greater internal family support. The success of such cooperation often relies on the CEO's personal role as a "technical bridge" through hands-on involvement to bridge cognitive and communication gaps between academia and industry.

P3c: Formal governance mechanisms and the intellectual property rights (IPR) protection system are key contextual variables moderating the above relationship. Research suggests that family firms can rely on "formal governance" (e.g., standardized cooperation agreements, clear IP ownership clauses) to promote and protect exploratory innovation [7]. In regions with strong, efficiently enforced IPR judicial protection, the contractual spirit of market logic is guaranteed, and familial fears of knowledge leakage are reduced. Inventor CEOs will be more willing to engage deeply in various forms of open innovation, and their involvement will have a more significant promoting effect on exploratory innovation. Conversely, in regions with weak institutional safeguards, their involvement will be more introverted and closed, strengthening the tendency to exploit internal existing knowledge. Furthermore, the composite knowledge structure of the top management team is also crucial here. Members with business and legal backgrounds can help design more robust cooperation contracts, thereby supporting the CEO's engagement in broader exploratory collaborations [8].

4 THEORETICAL CONTRIBUTIONS, MANAGERIAL IMPLICATIONS, AND FUTURE RESEARCH

4.1 Theoretical Contributions

4.1.1 Contextual deepening and expansion of upper echelons and CEO research

This study places research on inventor CEOs from the relatively universal "cognition-organizational process" model into the dynamic context of "institutional logic fusion" specific to China[1]. We not only respond to findings that the influence of inventor CEOs varies by context but, more importantly, reveal that the CEO's innovation involvement is a process of strategic identity construction and resource mobilization within a field interwoven with multiple institutional logics[10]. This provides a new theoretical perspective for understanding how leaders in non-Western contexts leverage their professional authority to navigate institutional complexity.

4.1.2 Institutional and process perspective supplement to research on antecedents of innovation ambidexterity

By introducing the perspective of interaction and fusion between institutional logics and refining it into three specific organizational practice interfaces, this study constructs a complete theoretical chain: "macro-institutional change ton meso-organizational interface fusion to micro-CEO behavior reshaping to macro-innovation strategy." This complements previous research focusing on static structures or executive traits [8], emphasizing that achieving innovation ambidexterity is a dynamic organizational and strategic renewal process driven by institutional evolution. In particular, we reconceptualize "intergenerational succession" from a point-in-time event into a continuous fusion interface, enriching the theoretical connotation of innovation succession.

4.1.3 Promoting dialogue between institutional logic theory and the micro-foundations of strategy

By focusing on the specific, observable strategic behavior of "hands-on involvement" by inventor CEOs, this study demonstrates how institutional logics are internalized, operationalized, and translated into concrete practices by actors (e.g., citing market data vs. family tradition in board debates; choosing contract types in collaboration design). This responds to the call for a "practice turn" in institutional theory, providing theoretically testable propositions on the micro-mechanisms through which institutional logics influence corporate competitive behavior and sustainable advantage.

4.2 Managerial Implications

4.2.1 Implications for family firm leaders and successors

(1) For "First-Generation Founder" Inventor CEOs: Move beyond the traditional cognition that "hands-on involvement equals responsibility" and consciously elevate personal technical participation to the strategic design of innovation architecture. The focus should be on building organizational platforms to carry exploration activities through governance fusion (e.g., introducing strategic board members) and designing spaces for "entrepreneurial succession," rather than relying solely on personal energy to drive progress. **(2)** For "Second-Generation" Inventor Successors: Hone the abilities of "institutional translation" and "cross-boundary integration." Their core task is to "translate" the technical language and business logic of market logic into risk narratives and long-term visions understandable and acceptable within familial logic; simultaneously, "transform" the family's resources and trust networks into social capital supporting open innovation. Their hands-on involvement should focus on acting as a connector of internal and external

resources and the "chief product manager" for innovation experiments.

4.2.2 Implications for corporate governance and board construction

(1) The board should transcend its supervisory role to become a "coordinating committee" for institutional logic fusion. Its responsibilities include designing deliberation procedures that enable constructive dialogue among industrial capital representatives, independent directors, and family representatives; and when evaluating major innovation projects, clearly distinguishing and comprehensively considering the project's financial returns, technological foresight, and long-term impact on family socioemotional wealth. **(2)** When forming the top management team, deliberately pursue strategic complementarity in knowledge structure [8]. Surrounding a technical inventor CEO, a composite team of executives skilled in strategy, capital operation, law, and marketing should be assembled to form a "collective brain" supporting ambidextrous innovation, compensating for the CEO's potential cognitive limitations.

4.2.3 Implications for policymakers and ecosystem builders

(1) Strengthening intellectual property protection is the "infrastructure" for unleashing the exploratory vitality of family firms. A clear, enforceable legal environment reduces familial fears of open cooperation, substantially broadening the external boundaries for inventor CEOs' exploratory involvement. **(2)** Encouraging the development of "patient capital" and highly professional third-party service institutions (e.g., law firms, valuation agencies specializing in technology transfer) can provide standardized, trustworthy tools and templates for the fusion of family firm governance structures, reducing transaction costs and uncertainty during the fusion process.

4.3 Future Research Directions

4.3.1 Empirical testing and measurement innovation

Future research could empirically test the propositions of this paper using large-sample data from Chinese listed family firms. Key challenges and opportunities lie in dynamic and multidimensional measurement of core constructs: for example, using machine learning to analyze CEO public speeches and interview texts to measure the changing weight of "market logic" versus "familial logic" expressions in their discourse; using longitudinal data to depict an index of corporate governance structure fusion; and using cross-class patent citations and novelty of knowledge elements to more finely distinguish between exploitative and exploratory innovation.

4.3.2 Longitudinal case and process-tracing studies

Employing embedded, in-depth longitudinal case studies to track several typical family firms over a complete intergenerational succession cycle (potentially 10-15 years), observing how the inventor CEO's hands-on involvement behavior evolves with the fusion process across the three interfaces. Such research can vividly reveal key fusion mechanisms (e.g., how a failed cooperation changes the family's attitude toward openness; how the intervention of an independent director changes board decision-making culture) and strategic turning points.

4.3.3 Expanding comparative research and exploring contextual boundaries

Future research could conduct useful comparisons: for example, comparing differences in the speed and form of fusion between familial and market logics, and their moderating strength on the CEO involvement effect, across different industries (e.g., traditional manufacturing vs. digital emerging industries); or comparing this study's framework with Western family firms (e.g., in Germany, Italy) to explore how cultural dimensions (e.g., individualism/collectivism, uncertainty avoidance) influence the initial weight and fusion pathways of the two logics, thereby extracting a more universal theoretical model.

5 CONCLUSION

Against the macro-background of the profound and dynamic fusion process between market and familial logics in China, this study re-examines the complex impact of the micro-strategic behavior of inventor CEO hands-on involvement on corporate innovation ambidexterity. We argue that on the path of Chinese family firms pursuing longevity and innovation-driven growth, the capital forces, professionalism, and open competition pressures carried by market logic are not an irreconcilable binary opposition to the emotional bonds, control preferences, and cross-generational perpetuation mission embedded in familial logic. On the contrary, through innovative grafting in governance structures, knowledge renewal and value dialogue in intergenerational succession, and bounded experimentation in open innovation practices, they achieve continuous interaction, negotiation, and synergy.

The inventor CEO, as the personification of technological knowledge, the firm's ultimate decision-maker, and a key bearer of the family vision, is precisely at the forefront where these two logics fuse and clash. Their hands-on involvement, therefore, transcends mere issues of time management or leadership style, becoming an extremely valuable theoretical window through which to observe and interpret how institutional complexity is experienced, navigated, and translated into organizational strategy by specific actors. Understanding this fusion process, fraught with tension yet brimming with vitality, can not only help Chinese family firms make more visionary innovation decisions in a changing era and bridge the intergenerational divide but also contribute a solid and inspiring theoretical perspective from a major emerging economy to global strategic management, innovation research, and institutional theory.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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