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Re-conceptualizing Innovative Incubation Models for Agribusiness SMEs Growth in China using Resource-Based Perspectives

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Abstract

Business incubation is a crucial mechanism for supporting the development of small and medium-sized enterprises (SMEs), particularly in emerging economies such as China. In the context of agribusiness, incubation plays an increasingly vital role in enhancing innovation, market access, and sustainability among agricultural entrepreneurs and food-based SMEs. This study develops a conceptual framework by integrating the Resource-Based View (RBV), Dynamic Capabilities (DC), and the Natural Resource-Based View (NRBV) to explain how incubator resources, including financial, human, technical, and network support, shape the outcomes of agribusiness SMEs through capability building and sustainability integration. The framework emphasizes the intention of agribusiness SMEs to form a long-term partnership with incubators as the focal dependent variable. This intention reflects their willingness for continuous collaboration, recognition of the incubator as a strategic partner in agrifood development, commitment to innovation, and confidence in the sustainable value of incubation services. By positioning partnership intention as the proximate outcome, the study highlights how effective resource allocation and capability development within agribusiness incubators can translate into enduring collaboration, which in turn creates a pathway to SME growth, competitiveness, and sustainable agricultural advancement. The paper contributes to incubation theory by integrating RBV, DC, and NRBV into a dynamic model while offering practical guidance for designing incubation strategies that strengthen agricultural entrepreneurship and foster sustainable partnerships in China's agribusiness sector.

Keywords: Agribusiness SMEs, China, Incubation Model, Innovation Incubation, Resource-Based View, VRIN Framework.

Introduction

Small and Medium-sized Enterprises (SMEs) play a foundational role in the economic structure of both developed and developing nations. They contribute substantially to gross domestic product, employment creation, innovation, and regional diversification. In emerging economies such as China, agribusiness SMEs have become especially important due to their role in strengthening food security, rural livelihoods, and sustainable agricultural transformation. These enterprises are also facing rising pressure to adapt to shifting market demands and technological change (1). Globally, SMEs account for over 90 percent of all businesses and more than 50 percent of employment. In China, they generate about 60 percent of GDP and nearly 80 percent of urban employment (2). Within the agribusiness sector, SMEs contribute significantly to agricultural modernization, value chain efficiency, and rural employment, making their development a national priority.

To strengthen SME contributions, the Chinese government launched the "Mass Entrepreneurship and Innovation" strategy in 2014. The policy sought to stimulate grassroots innovation, reduce entry barriers, and improve institutional support for entrepreneurship. One visible outcome has been the rapid expansion of business incubators. By 2022, there were more than 11,800 incubators that offered infrastructure, mentoring, seed funding, and access to technology platforms (3). Many of these incubators now include specialized programs for agribusiness startups, focusing on areas such as food technology, smart farming, and green supply chain innovation. Recent initiatives also stress coordination among incubators,

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universities, and industry partners to improve knowledge exchange and resource use (4). Even so, incubator performance varies widely. Some nurture high-growth ventures, while others provide only basic administrative services. Research points to a central lesson, infrastructure or finance alone does not deliver sustained performance.

What matters is not only the availability of resources but how incubators coordinate and deliver them to strengthen firm competitiveness. Prior research highlights that incubators provide structured support that enhances the strategic capacity of SMEs (5). They also act as intermediaries that align internal and external resources, improving the legitimacy and survival of new ventures (6). In addition, studies show that resource delivery mechanisms, such as tailored mentorship and network access, directly influence innovative outcomes (7). In the agribusiness context, such mechanisms are critical for connecting SMEs with agricultural research institutions, technology providers, and rural cooperatives. Other research emphasizes that incubation models must go beyond infrastructure to deliver integrated services that create sustained advantages for firms (8).

The Resource-Based View (RBV) offers a useful basis for understanding this pattern. RBV holds that enduring advantage comes from resources that are valuable, rare, inimitable, and non-substitutable (9). In the incubation context, this means helping SMEs access and develop VRIN-type resources that may otherwise be out of reach because of financial or institutional limits (10, 11). For agribusiness SMEs, such resources may include agricultural technology, sustainable production knowledge, and market linkages that enhance food system efficiency. Incubators do more than hand over inputs. They can act as co-creators of firm resource portfolios by orchestrating access, learning, integration, and recombination of resources that support growth (12). At the same time, much empirical work remains descriptive and stops short of linking observed outcomes to the formation of VRIN resources, even though studies do show gains in learning and innovation among incubated firms (10, 13). RBV on its own also says little about how resource value changes through time or how firms adjust resource bundles when conditions shift. Dynamic capabilities theory addresses this by explaining how learning, adaptation, and reconfiguration sustain advantage under change (14). In incubation settings, success depends not only on what is provided but on how firms are enabled to absorb and use support through mentoring, peer learning, and coordinated routines (15). This process varies across sectors; for instance, in agribusiness, incubators often focus on helping firms translate these learning routines into practice by integrating modern farming methods, green innovation, and digital marketing into traditional agricultural operations.

Regional conditions further shape incubation outcomes. Provinces such as Fujian, Guangdong, and Zhejiang have strong industrial clusters, export infrastructure, and innovation linkages, while many inland regions face weaker institutions and limited networks. This regional variation is also seen in China's agribusiness sector, where eastern coastal areas benefit from agritech innovation and global market access, while interior provinces rely more on local resource-based production and smallholder networks. These differences influence demand for services and the form support should take. Incubators in high-capacity regions can draw on research universities, policy backing, and established financing mechanisms (16), and evidence shows that SMEs in innovation-intensive regions benefit more from tailored programs (17). For agribusiness incubators, proximity to agricultural universities, research centers, and agro-industrial parks becomes a crucial determinant of success. By contrast, incubators in peripheral regions often operate with gaps in networks, talent, and policy support, which contributes to uneven performance across the national system (18). Regional adaptation is therefore important. Incubators that align services with local economic conditions and firm capabilities achieve stronger long-term effects on survival and competitiveness (16). A combined lens that uses RBV for firm-level resource logic and institutional perspectives for environmental conditions helps explain how incubators mediate between system structures and firm needs.

Sustainability is another important element. China's carbon and green development goals place pressure on SMEs to adopt environmental and social practices. Many firms lack the resources or

expertise to do this independently. The Natural Resource-Based View (NRBV) extends RBV by treating capabilities such as pollution prevention, eco-design, and sustainability leadership as sources of advantage (19). In principle, these can become VRIN resources that raise compliance readiness, stakeholder trust, and market reputation. In practice, only a limited number of Chinese incubators offer structured support in green innovation, circular economy training, or ESG integration, and existing initiatives are often fragmented or externally driven rather than embedded in strategy (13, 20). Even so, promising examples exist. In Jiangsu, firms that received environmental management training and clean technology support achieved higher innovation and export performance (21). Similar approaches in agricultural provinces like Shandong and Heilongjiang show potential, where incubators promote sustainable agrifood technologies and low-carbon production systems. These cases suggest that when sustainability is embedded as a strategic resource, it strengthens both competitiveness and legitimacy.

Despite a large policy push and a growing number of studies, important gaps remain. Many evaluations of incubator effectiveness report mixed results and call for stronger, more relevant support mechanisms (22, 23). Evidence also shows that intangible resources and network access are critical for SME success, beyond tangible inputs such as space and subsidies (24, 25). Yet the application of RBV to incubation in China is still limited, and there is a lack of regionally grounded models that explain how incubators help firms build and deploy strategic resources over time (26, 27). This limitation is especially evident in the agribusiness sector, where regional diversity in crops, markets, and resource endowments calls for incubation models tailored to agricultural production and processing. There is also a need to clarify how sustainability can be integrated into incubation in ways that are systematic rather than ad hoc (20, 28).

In response, this paper proposes a conceptual framework that integrates the Resource-Based View (RBV), dynamic capabilities theory, and the Natural Resource-Based View (NRBV). The purpose of the framework is threefold. First, it explains how incubators assist SMEs in accessing and configuring strategic resources that are essential for competitiveness, such as financial capital, networks, and knowledge-based assets (22, 23). Second, it highlights how firms not only acquire these resources but also learn, adapt, and reconfigure them in response to dynamic market and institutional changes, which ensures that resources continue to generate value over time (24, 25). This process is particularly relevant for agribusiness SMEs, where shifting market preferences, climate challenges, and sustainability regulations require continuous adaptation. Third, the framework positions sustainability as a critical capability, showing how green practices, environmental training, and ESG readiness can be embedded into incubation models to strengthen both legitimacy and long-term growth (29). By emphasizing the alignment of internal and external resources, the influence of regional institutions, and the contribution of sustainability-oriented capabilities, the framework provides a more comprehensive perspective on incubation processes.

Therefore, this paper aims to address the identified gaps by proposing a conceptual framework that advances understanding of innovative incubation models and their role in supporting agribusiness SME development in China. Specifically, the study pursues three objectives. First, it seeks to explain how incubators enable agribusiness SMEs to access and configure resources that meet the VRIN (valuable, rare, inimitable, and non-substitutable) criteria and thereby build competitive advantage. Second, it aims to analyse how dynamic capabilities, such as learning, adaptation, and reconfiguration that mediate the transformation of these resources into sustained performance outcomes. Third, it considers how sustainability-oriented practices, particularly those promoting green innovation and responsible resource use in agribusiness, can be embedded within incubation models to strengthen both legitimacy and long-term growth.

By pursuing these objectives, the paper contributes to theoretical development, provides guidance for future empirical research, and offers insights for policymakers and practitioners concerned with entrepreneurship and sustainable development in emerging economies. In particular, it extends these insights to the agribusiness sector, where incubators play a growing role in enhancing the competitiveness and sustainability of small

agricultural enterprises. This study positions agribusiness SMEs' intention to form a permanent partnership with incubators as the proximate dependent variable. Partnership intention reflects whether SMEs will sustain collaboration to secure continued access to resources and capabilities. Such partnerships are vital for agribusiness SMEs in maintaining access to agricultural innovation, value chain networks, and green technology resources that support productivity and sustainability goals. While SME growth and competitiveness remain the ultimate objectives, partnership intention is treated as the immediate outcome that channels incubator support into long-term performance.

Methodology

This study adopts a conceptual approach; therefore, no primary data collection or statistical testing was undertaken. Instead, the framework was developed through a structured synthesis of established theoretical perspectives and a comprehensive review of recent literature on SME incubation, strategic resource management, and sustainability integration. The review covered peer-reviewed articles, policy reports, and empirical studies, with a particular emphasis on research conducted in the Chinese context. Special consideration was given to studies and policy documents related to agribusiness incubation, given its growing relevance in China's rural and regional development agenda. This ensured that the framework reflects both international theoretical debates and the specific institutional conditions shaping SME incubation in China.

The theoretical foundation rests on three complementary perspectives: the Resource-Based View (RBV), dynamic capabilities theory, and the Natural Resource-Based View (NRBV). The RBV highlights how incubators enable SMEs to access and develop resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Dynamic capabilities theory extends this by explaining how firms learn, adapt, and reconfigure resource bundles to sustain competitiveness in changing markets. The NRBV enriches the framework by emphasizing sustainability as a source of strategic advantage, particularly through practices such as eco-innovation, pollution prevention, and ESG integration. Taken together, these perspectives provide a comprehensive lens for understanding incubators as platforms that not only provide resources but also strengthen firms' ability to deploy them strategically and responsibly.

The framework synthesizes three clusters of constructs: resource-based incubator inputs, dynamic capability mechanisms, and sustainability integration. The dependent variable is defined as SMEs' intention to form a permanent partnership with incubators. This construct is operationalized through four indicators: (i) long-term collaboration, (ii) strategic partnership view, (iii) future cooperation commitment, and (iv) confidence in the sustainable value of incubation services. In the context of agribusiness SMEs, this partnership intention reflects the willingness to engage continuously with incubators to enhance production innovation, market access, and sustainability outcomes across agricultural value chains. SME growth and competitiveness are regarded as downstream consequences, which may be examined in later empirical extensions of the model rather than as direct outcomes in this study.

Although this paper does not test the model empirically, a pathway for future research is outlined. A quantitative, survey-based design is proposed to validate the relationships identified in the framework. Potential respondents would include agribusiness SME founders, senior managers, and innovation officers who have engaged with incubators for at least one year. Incubators considered could include government-supported centers, university-affiliated units, and private accelerators, ensuring diversity of models. Analytical methods such as Structural Equation Modelling (SEM) could be applied to examine the links between resource configurations, dynamic capabilities, sustainability support, and SMEs' partnership intention, including potential mediating and moderating effects across regions and sectors.

In sum, the methodology relies on theoretical synthesis and structured literature review, with an emphasis on contextual relevance to China. By also outlining a feasible empirical design, the study provides a foundation for future validation and contributes a clear pathway for extending conceptual insights into testable research.

Results

The results of this conceptual study are presented through a framework that combines three theoretical perspectives: the Resource-Based View (RBV), the Dynamic Capabilities Theory, and the Natural Resource-Based View (NRBV). Together, these perspectives show how incubators contribute to SME growth, competitiveness, and sustainability by providing strategic resources, enabling capability development, and embedding environmental responsibility. When applied to agribusiness SMEs, the framework highlights how incubators can enhance innovation across agricultural production, processing, and distribution systems while promoting sustainable resource management. The immediate outcome emphasized in this framework is SMEs' intention to form a permanent partnership with incubators, which reflects their willingness to sustain collaboration and rely on incubators as long-term strategic allies. This partnership intention is a proximate dependent variable that channels incubation support into enduring cooperation. In the longer term, such partnerships create a pathway for SME growth, competitiveness, and sustainability.

From the RBV perspective, incubators serve as strategic platforms that supply resources that are valuable, rare, inimitable, and non-substitutable (25). These include financial resources such as seed capital, grants, and access to venture capital networks that allow firms to invest in early development and market expansion (30). Human resources are delivered through mentorship, training, and advisory services that strengthen managerial knowledge and strategic direction (31). Technical resources take the form of research and development facilities, prototyping laboratories, and consulting support that are particularly important for high-technology ventures. In addition, network-based resources are created through partnerships, networking events, and investor connections that enhance legitimacy and expand market opportunities (13). Within agricultural value chains, these networks also link SMEs with farmers, cooperatives, logistics providers, and government agencies, creating synergies that strengthen the overall agribusiness ecosystem. Access to these four categories of resources provides SMEs with the foundation for competitive advantage.

Within the RBV framework, resources are assessed through the VRIN lens: valuable, rare, inimitable, and non-substitutable. In the incubation setting, financial resources are valuable but often imitable, requiring complementary support to sustain advantage. Human resources, such as mentoring and managerial expertise, become rare and inimitable when linked to tacit knowledge and industry-specific experience. Technical resources like laboratories and prototyping facilities are valuable and sometimes non-substitutable, particularly in high-technology sectors. Network-based resources, including partnerships and investor legitimacy, are especially critical, as they embody rarity, inimitability, and non-substitutability through their embeddedness in social and institutional structures. By helping SMEs access and configure these VRIN resources, incubators serve as platforms for building durable competitive advantages.

While RBV highlights the importance of resource possession, the Dynamic Capabilities Theory explains how SMEs transform these resources into long-term competitiveness. Incubators contribute to learning mechanisms by offering continuous mentorship, problem-solving workshops, and opportunities for peer learning that enable firms to absorb new knowledge (31). They also enhance strategic reconfiguration by providing tools and guidance that help firms realign their resources when market conditions shift or new opportunities arise (32). Finally, incubators strengthen coordination support through standardized processes, monitoring systems, and cross-functional training that ensure internal coherence and effective decision making (33). These mechanisms allow SMEs to adapt and remain competitive in dynamic environments.

Sustainability is integrated into the framework through the NRBV, which treats environmental and social factors as strategic resources (19). Incubators increasingly contribute by providing green innovation training, including sustainable product design and resource efficiency practices (28). They also promote ESG readiness by equipping SMEs with guidelines, templates, and auditing tools that meet investor and policy expectations (33). Furthermore, they introduce sustainability tools such as carbon tracking systems, energy monitoring, and reporting

platforms that enhance both compliance and reputation (34). These sustainability-focused activities not only strengthen agribusiness SMEs' environmental performance but also help them meet growing consumer demand for traceable and responsibly produced food. These activities embed sustainability into SME strategies and support long-term legitimacy in a policy environment that prioritizes green growth.

The reconceptualization advanced in this paper highlights how each incubation mechanism contributes to the buildup of agribusiness SME resources. Mentoring, advisory services, and training programs translate into enhanced human capital by improving managerial expertise and strategic thinking. Networking events and partnerships create social capital that SMEs can leverage for market entry and investor credibility. Access to R&D facilities, prototyping support, and technical guidance strengthens technological capabilities, which can later evolve into VRIN-type resources. Financial support, while often imitable, becomes more valuable when bundled with legitimacy gained from incubator endorsement. Sustainability initiatives, such as eco-design training or carbon monitoring systems, foster environmental capabilities that align with NRBV and reinforce legitimacy with regulators and stakeholders. In combination, these mechanisms ensure that incubators are not just providers of inputs but active facilitators of cumulative resource building, capability development, and the formation of long-term partnership intentions among SMEs.

In the Chinese context, incubation models can generally be grouped into three main categories that align with these theoretical perspectives. Government-led incubators are largely policy-driven, focusing on objectives such as employment generation, SME survival, and regional upgrading, which means they often prioritize access to tangible resources and compliance support (35). In recent years, this model has been extended to agribusiness development through rural revitalization programs, where incubators facilitate innovation in agricultural production, food processing, and agri-tech applications. University- based incubators emphasize knowledge-intensive activities, including research commercialization, technology transfer, and entrepreneurship among students and faculty. These incubators strengthen human and technical resources while also enabling learning mechanisms consistent with dynamic capabilities (18). Private incubators and accelerators, by contrast, are market-oriented, offering intensive mentorship, investor access, and rapid scaling opportunities that directly build financial and network-based resources while encouraging firms to reconfigure them for growth (36). Each of these models reflects distinct priorities and resource configurations, which explains why their effectiveness varies across sectors and provinces.

In addition to these broad categories, several contextual elements make China's incubation system distinct. First, state-owned enterprises (SOEs) play a unique role as both resource providers and strategic partners, often channelling financial support, infrastructure, and policy backing into incubation initiatives. Their involvement ensures stability but can also create tensions between commercial performance and policy compliance (37). SOEs often support agricultural industrial parks, smart farming initiatives, and food safety programs that integrate SMEs into national supply chains. Second, university-based incubators in China are strongly supported by provincial and central governments, which view them as engines of knowledge transfer and commercialization. These incubators not only draw on research expertise and student entrepreneurship but also benefit from subsidies, preferential policies, and access to state-led innovation funds (38). Finally, provincial governments exercise considerable influence over the orientation and effectiveness of incubation models. They set local priorities, provide financial incentives, and shape the regulatory environment, which leads to significant regional variations in incubation outcomes (38). Together, SOEs, university incubators, and provincial governments create a hybrid incubation ecosystem that blends market logic with state and academic support, making China's case distinct from other innovation-driven economies.

The framework also recognizes that outcomes vary depending on contextual moderating variables. Regional economic conditions influence the type and intensity of incubation support, with developed coastal provinces often focusing on advanced technology and internationalization, while less developed areas emphasize basic

entrepreneurship and institutional support (39). The type of incubator also shapes outcomes, as government-sponsored, university-affiliated, and private incubators differ in priorities, ranging from public policy goals to commercialization and financial scalability (26). Sectoral differences further moderate the effectiveness of incubation, since industries such as biotechnology and clean technology require intensive R&D and regulatory support, while digital firms focus on customer acquisition and platform growth. Agribusiness, by contrast, depends more on value-chain coordination, quality assurance, and sustainability alignment, which demand incubation programs tailored to local agricultural contexts.

As illustrated in Figure 1, the framework links incubator services with SME access to resources, capability development, and sustainability integration, all of which are shaped by regional, institutional, and sectoral contexts. This integrated perspective demonstrates that incubators are more than service providers: they act as orchestrators of resources, enablers of dynamic capabilities, and promoters of sustainability. Most importantly, the framework positions agribusiness SMEs' partnership intention as the key dependent variable, which in turn provides a pathway to growth, competitiveness, and resilience in China's evolving economic landscape.

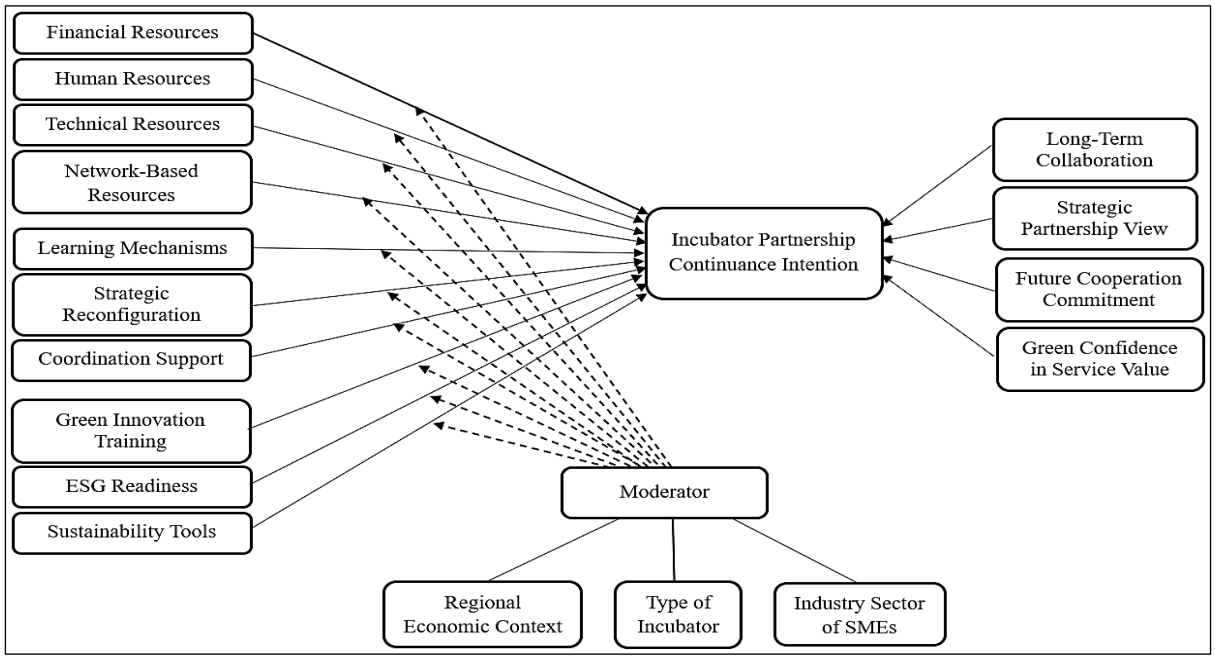

Figure 1: Conceptual Framework

Discussion

Innovative incubation models are examined in this study to explain their role in strengthening agribusiness SMEs' willingness to maintain long-term collaboration with incubators. Using perspectives from the Resource-Based View, dynamic capabilities theory, and the Natural Resource-Based View, the analysis outlines how incubators assist firms in developing and sustaining strategic resources while adjusting to growing sustainability expectations. In the context of agribusiness SMEs, where firms depend heavily on natural resources, agricultural supply chains, and seasonally driven markets, incubation support serves not only as a source of business assistance but also as a platform for technological and ecological upgrading. Partnership intention in this context reflects agribusiness SMEs' willingness to sustain cooperation with incubators that provide access to agricultural expertise, value chain networks, and sustainability-oriented innovations essential for productivity and competitiveness.

RBV offers a foundation to understand how incubators help agribusiness SMEs secure resources that are valuable, rare, inimitable, and non-substitutable. In the agribusiness setting, these resources may include advanced agricultural technologies, value-added processing skills, and market information systems that improve efficiency and reduce post-harvest losses. However, resource possession alone is insufficient

to ensure competitiveness. The dynamic capabilities perspective adds a temporal and adaptive dimension by explaining how agribusiness firms learn to reconfigure these resources in response to environmental uncertainty, climate risks, and shifting consumer preferences for safe and sustainable food. For instance, incubators that promote adaptive learning and smart farming innovation can help firms manage resource constraints and respond to sustainability standards in agri-food supply chains. Through mentoring, network coordination, and continuous feedback, incubators foster the agility needed for agribusiness SMEs to sustain competitive advantage in volatile agricultural markets.

The NRBV complements these perspectives by positioning sustainability as a central component of resource value and capability development. In the agribusiness context, sustainability is directly linked to soil health, water conservation, energy use, and food safety, factors that determine both productivity and market legitimacy. Agribusiness incubators increasingly introduce environmental management systems, green production standards, and circular economy practices that enhance resource efficiency and ecological performance. For example, training in waste-to-value processes, organic certification, or low-carbon logistics can transform compliance obligations into market opportunities. These sustainability-oriented initiatives not only strengthen agribusiness SMEs' reputation among eco-conscious consumers and investors but also reinforce their trust in incubators as strategic partners. Consequently, the intention to maintain long-term collaboration becomes rooted in shared value creation and sustainable performance outcomes. Collectively, the RBV, DC, and NRBV perspectives explain how agribusiness SMEs' partnership intentions emerge from the interaction between strategic resource access, adaptive capability building, and sustainability integration within agribusiness incubation ecosystems.

The novelty of this reconceptualization lies in combining RBV, Dynamic Capabilities, and NRBV into a single framework while recognizing the institutional and social capital dimensions of incubation. By doing so, the model extends RBV beyond static possession of VRIN resources to capture how incubators enable agribusiness SMEs to reconfigure assets through dynamic capabilities such as learning and strategic flexibility. It also positions sustainability and green capabilities as integral, reflecting NRBV insights. Additionally, network-based resources are treated as a form of social capital, emphasizing how incubators mediate access to trust-based relationships, collaborations, and legitimacy within agribusiness value chains and regional food innovation networks. These combined mechanisms explain why agribusiness SMEs may choose to formalize their collaboration with incubators in the form of long-term partnerships.

An important implication of this framework lies in how incubator managers allocate resources. Rather than dispersing resources broadly, managers should prioritize mechanisms that directly enhance SMEs' strategic capabilities and strengthen their partnership intention. Financial support should be coupled with structured mentoring and follow-up, ensuring that funds build trust and encourage ongoing collaboration. Human resource inputs, such as advisory and training, need to be tailored to sector-specific contexts, particularly in agribusiness, where production cycles, market volatility, and compliance with food safety standards demand specialized knowledge. Technical resources should be integrated with opportunities for peer learning and joint projects, including collaborative innovation in sustainable farming, agri-tech solutions, and value-added processing. Network resources, meanwhile, must go beyond symbolic connections to include durable relationships with investors, agrifood industry associations, research institutions, and supply chain partners. By aligning allocation strategies with the VRIN and dynamic capability principles, incubators can move from passive service provision to active capability building and long-term partnership creation.

Policy interventions are equally critical. Chinese authorities could strengthen agribusiness incubation ecosystems by encouraging greater coordination between government-led, university-based, and private models. Regional governments can play a stronger role in adapting national policies to local economic conditions, ensuring that incubators in less developed areas receive targeted support for infrastructure, agri-innovation training, market access. National policy should also

create incentives for incubators to embed sustainability into their operations, for example, through grants tied to green agriculture initiatives, circular bioeconomy projects, or low-carbon food supply systems. Such interventions not only enhance agribusiness SME performance but also strengthen their willingness to maintain long-term partnerships with incubators. Finally, fostering international collaboration and benchmarking against successful global incubation systems can help agribusiness China's incubators evolve toward best practices while reinforcing SMEs' confidence in the value of sustained collaboration.

When viewed internationally, China's incubation models share certain features with those in innovation-driven economies, yet they also reflect unique institutional characteristics. Like Israel's accelerator-driven system, private incubators in China emphasize rapid scaling and venture capital access. University-based incubators resemble those in Singapore, which leverage research institutions for technology transfer and commercialization. Government-led incubators in China parallel South Korea's state-supported innovation programs, focusing on employment generation and industrial upgrading. However, unlike these countries where models are often more specialized and globally integrated, China's incubation landscape remains highly heterogeneous, shaped by regional disparities and strong state involvement. This suggests that while China is gradually aligning with international norms, its incubation system continues to evolve in a distinctively hybrid form that blends global practices with local institutional priorities.

Overall, this study moves beyond the conventional understanding of incubation as administrative or infrastructure support. It positions incubators as strategic enablers capable of shaping SME resources, developing capabilities, embedding sustainability, and most importantly, fostering SMEs' intention to form permanent partnerships. For agribusiness SMEs, such partnerships are instrumental in sustaining innovation, meeting sustainability certification standards, and improving integration within domestic and export food value chains. By placing partnership intention at the center of the framework, the study emphasizes that enduring collaboration between SMEs and incubators is the key channel through which growth, competitiveness, and sustainability are ultimately achieved. This makes partnership intention not only a theoretical construct but also a practical indicator for evaluating incubation effectiveness in both research and policy contexts.

Conclusion

Focusing on agribusiness SMEs, this study examines how innovative incubation models can support sustainable development in China by drawing on insights from the Resource-Based View, dynamic capabilities, and the Natural Resource-Based View. It advances a conceptual framework that integrates strategic resource provision, capability building, and sustainability orientation as key elements of effective incubation. Although the framework has not yet been empirically validated, it provides a useful foundation for future scholarly inquiry and practical application. Central to the model is agribusiness SMEs' intention to establish long-term partnerships with incubators, which serves as a direct link between incubation support, ongoing collaboration, and subsequent improve-ments in firm growth and competitive-ness.

From a conceptual standpoint, the framework reframes incubators as active strategic partners rather than passive service providers, highlighting their role in fostering sustained competitiveness over time. It also places strong emphasis on the integration of sustainability within incubation practices, reflecting increasing environmental and social expectations placed on agribusiness SMEs. Given the changing economic conditions and rising sustainability demands, the framework offers relevant guidance for rethinking and refining incubation approaches in ways that align strategic support with long-term development objectives.

In practice, effective incubation requires more strategic resource allocation. Rather than focusing on the number of services provided, incubators should emphasize interventions that build absorptive capacity, entrepreneurial learning, and long-term collaboration. Agribusiness incubators, in particular, can create value by linking farmers, processors, and distributors through shared infrastructure, training, and digital platforms that enhance productivity and resilience to climate-related challenges. Targeted mentoring, technical training, and access to technology platforms can improve performance while fostering enduring trust between firms and incubators.

In addition to these points, incubator managers should prioritize resource allocation strategies that emphasize quality over quantity. For example, providing fewer but more intensive mentorship and networking opportunities may yield stronger long-term outcomes than offering a wide range of generic services. Greater attention should also be given to integrating sustainability training, digital tools, and market access programs into incubation portfolios, ensuring that SMEs build capabilities that remain relevant in competitive and regulated environments.

From a policy perspective, Chinese authorities could strengthen incubation ecosystems by encouraging collaboration between government-led, university-based, and private incubators, thereby reducing duplication and fostering complementarity. Policies should also support regional customization, recognizing that agribusiness SMEs in coastal innovation hubs face different challenges than those in inland provinces. Finally, national programs could incentivize incubators to embed sustainability and internationalization into their operations, aligning SME development with China's broader goals of green growth and global competitiveness.

This paper is conceptual in nature, and its proposed framework has not yet been empirically validated. The analysis is also limited to the Chinese context, which may restrict generalizability to other emerging or developed economies. In addition, the framework simplifies the diversity of incubation models, while in practice their boundaries may overlap and evolve over time.

Future research could test the framework through comparative case studies or quantitative analysis of incubation outcomes across different regions in China. Cross-national studies, particularly with innovation-driven economies such as Israel, Singapore, and South Korea, would further enrich the understanding of whether China's incubation models are converging with international norms. Longitudinal studies could also examine how incubator interventions build SME resources and capabilities over time, especially in relation to sustainability and green innovation.

Abbreviations

ESG: Environmental, Social, and Governance, NRBV: Natural Resource-Based View, RBV: Resource-Based View, R&D: Research and Development, SMEs: Small and Medium-Sized Enterprises, VRIN: Valuable, Rare, Inimitable, and Non-substitutable.

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Author Contributions

Chen Yongming: conceptualization, drafting, analysis, visualization of the manuscript, Malisah Latip: supervised the research process, conceptualization, review, editing, project administration, correspondence, Ismawati Sharkawi: review, editing, validation of the theoretical framework, refinement of the manuscript structure, Nurul Hidayu Mat Jusoh: literature review, editing and formatting. All authors have read and approved the final version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest.

Declaration of Artificial Intelligence (AI) Assistance

During the preparation of this work, the authors used generative AI and AI-assisted technologies to improve the clarity, language flow, and structure of the manuscript. The use of these tools was limited to editing, rephrasing, and formatting support; all intellectual content, interpretations, and conclusions are the sole responsibility of the authors. The authors reviewed and verified all generated suggestions to ensure accuracy and integrity.

Ethics Approval

This article is a conceptual paper that did not involve human participants or animals; therefore, ethical approval was not required at this stage. Ethical approval will be obtained prior to conducting future empirical data collection.

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