Analysing Management Capabilities Interface on Governance and Performance in Pharmaceutical Alliances Context

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Abstract: Strategic alliances have become a vital tool for organizations seeking competitive advantage, innovation, and market expansion—particularly in dynamic sectors such as pharmaceuticals. Despite their growing prevalence, many alliances fail to deliver expected outcomes, often due to insufficient alliance management capabilities (AMC) and ineffective alliance governance (AG). While AMC and AG have been examined individually in prior research, their combined impact on alliance performance remains underexplored. This study addresses this gap by investigating the interrelationships among AMC, AG, and Strategic Alliance Performance (SAP) in the pharmaceutical industry. Grounded in dynamic capabilities and governance theories, a conceptual model was developed and empirically tested using survey data from 193 alliance professionals in pharmaceutical firms. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to evaluate the model and test the proposed hypotheses. The results indicate that AMC significantly influences both AG and SAP, while AG also positively affects SAP. Specifically, AMC accounts for 32.1% of the variance in SAP and 30.4% of the variance in AG, whereas AG explains 52.2% of the variation in SAP. These findings underscore the central role of AMC in shaping governance structures that enhance alliance performance. This research contributes to the literature by integrating AMC and AG into a unified framework, offering theoretical clarity on how capabilities translate into performance through governance mechanisms. The study also responds to recent calls for empirical tools to measure AMC and evaluate its strategic value. From a practical perspective, the results suggest that pharmaceutical firms can improve alliance outcomes by strengthening internal capabilities that support governance design and implementation. Overall, the study highlights the dynamic interplay between managerial capabilities and governance structures in determining the success of strategic alliances. It provides both academic and managerial insights into how firms can better manage interorganizational partnerships in complex and uncertain VUCA (Volatile**,** Uncertain**,** Complex**,** and Ambiguous) environments.

Keywords: Strategic alliances, Alliance management capability, Alliance governance, Strategic alliance performance, Pharmaceutical industry

1. Introduction

Corporate Strategies are increasingly employed by organizations aiming to access key resources, and foster innovation and to enhance competitiveness by adapting to market demands and meet customer needs (Ferrigno et al. 2023; Abdeen et al. 2025). Strategic alliances as a prominent approach in the last two decades enable firms to penetrate new markets, develop capabilities, and respond to fast-changing environments (Zahoor et al. 2023; Russo and Cesarani 2017).

Despite their strategic relevance, many alliances underperform or dissolve prematurely (Al-Tabbaa and Zahoor 2024). While enthusiasm often fuels alliance formation, sustaining them requires robust managerial practices (Vurro et al. 2023; Engsig & Nielsen 2024). As such, there is growing interest in understanding the capabilities that support successful alliance implementation—namely, Alliance Management Capability (AMC), which encompasses the knowledge, experience, and routines needed to navigate alliance complexities (Vurro et al. 2023).

AMC refers to a firm's ability to acquire, integrate, and apply alliance-related knowledge (Robson et al. 2019). These capabilities may be cultivated over time through practice and deliberate investment (Vurro et al. 2023). However, even with increased scholarly focus on AMC, limited empirical work has investigated its direct and indirect effects on Strategic Alliance Performance (SAP), or its influence on alliance governance (Zahoor et al. 2023; Mamédio et al. 2019).

Two key gaps remain underexplored. First, how does AMC impact SAP, either independently or via its effect on governance structures? Second, what role does AMC play in shaping governance mechanisms to align partner objectives and reduce alliance failure (Sacchetti and Catturani 2021)?

Alliance governance (AG) mechanisms such as joint ventures, licensing, or franchising facilitate resource coordination and risk-sharing while clarifying responsibilities and aligning incentives (Kale & Singh 2009). AMC could be a crucial enabler of these governance forms, empowering firms to match governance strategies with specific alliance goal (Zahoor et al. 2023). Yet this interdependence remains underexamined.

To address this, our study investigates the relationships among AMC, AG, and SAP through a conceptual model grounded in dynamic capabilities and governance theory. Data were gathered via a structured survey administered to 193 alliance professionals in the Iranian pharmaceutical sector—a context where partnerships are critical for sustaining innovation, regulatory compliance, and market access (Shakeri and Radfar 2017).

Using Partial Least Squares Structural Equation Modeling (PLS-SEM), we test both direct and indirect effects of AMC on SAP. Our analysis shows that AMC significantly predicts both AG and SAP. Specifically, AMC explains 30.4% of the variance in AG and 32.1% in SAP, while AG alone accounts for 52.2% of the variance in SAP. These results reinforce the argument that AMC serves as both an independent and enabling factor for alliance success.

This research offers a unified framework that integrates capability development with governance design, responding to calls for empirical models that map governance mechanisms to alliance outcomes (Diakité et al. 2022) and the importance of using more direct measures to assess alliance management capabilities (Mamédio et al. 2019).

2. Literature Review

2.1 Strategic Alliances

Strategic alliances are cooperative agreements between firms that aim to achieve joint objectives through collaboration. They allow firms to share risks, enter new markets, and access complementary capabilities. In resource-constrained or innovation-driven environments, alliances provide critical flexibility and speed in responding to competition (Ferrigno et al. 2023).

The benefits of alliances include economies of scale, faster innovation cycles, and the co-development of new knowledge. Alliances are particularly relevant when firms face external volatility or need to overcome internal limitations, such as restricted capital, technological gaps, or insufficient market reach (Lee and Thosuwanchot 2025).

Despite their appeal, alliance performance varies significantly. Outcomes are difficult to measure uniformly, with scholars relying on both objective metrics (e.g., profitability, growth) and subjective evaluations (e.g., partner satisfaction, strategic fit, learning outcomes), and even use alliance duration as a proxy for success (Das and Teng 2003).

A recurring concern in the literature is the high failure rate of alliances, often attributed to poor design, weak coordination, or governance failures (Zahoor et al. 2023; Chiao et al. 2025). Consequently, researchers emphasize the need for managerial tools that can support the full alliance lifecycle—from partner selection and goal alignment to performance evaluation and termination (Russo and Cesarani 2017; Faems et al. 2008).

2.2 Alliance Management Capability and the Dynamic Capabilities View

The Dynamic Capabilities View (DCV), a refinement of the Resource-Based View (RBV), focuses on how firms reconfigure and renew their capabilities in response to dynamic environments (Teece et al. 1997). While RBV emphasizes static resources, DCV highlights processes that enable innovation and sustained competitiveness in changing markets (Bleady et al. 2018).

Alliance Management Capability (AMC) is a dynamic capability that supports the systematic management of inter-organizational relationships. It encompasses partner identification, coordination, learning, and governance. AMC evolves through repeated alliance experience, enabling firms to institutionalize best practices and respond to complex partnership demands (Gonçalves and da Conceição 2008). Firms with robust AMC are better positioned to navigate uncertainty and drive long-term alliance performance (Widjaja-Adhi et al. 2025).

These capabilities are often unique, difficult to replicate, and context-specific—making them a key differentiator in alliance performance. Effective AMC includes the anticipation of potential risks, continuous learning, and the alignment of governance strategies with evolving alliance needs (Robson et al. 2019).

Although the significance of AMC is widely acknowledged, empirical research linking it to alliance performance—especially via governance pathways—remains scarce. This study responds to this gap by testing AMC's direct and mediated effects on alliance outcomes.

2.3 Alliance Governance

Alliance governance refers to the mechanisms used to manage and structure inter-firm collaborations. These include legal frameworks, equity ownership, contracts, and informal trust-based systems. Governance influences partner behaviour, conflict resolution, and strategic alignment over the lifecycle of the alliance (Syaifuddin 2025).

Governance mechanisms are typically grouped into three categories: equity-based (e.g., joint ventures), contractual (legal agreements), and relational (trust and norms). Each type serves a specific function, with many alliances adopting a hybrid model (Kale and Singh 2009).

Contractual governance relies on legally binding documents to delineate roles, responsibilities, and contingencies. These provisions reduce ambiguity, protect investments, and ensure compliance. Strong contracts contribute to performance by preventing misunderstandings and facilitating dispute resolution (Keller et al. 2021).

Relational governance, in contrast, emphasizes informal coordination through mutual trust, reciprocity, and shared values (Faems et al. 2008). Relational governance refers to the extent to which alliance partners rely on shared social norms to guide behaviour, fostering trust, coordination, and knowledge sharing while reducing collaboration barriers (Keller et al., 2021).

Effective alliances often require both governance types, evolving governance arrangements as relationships mature and partner expectations shift. Yet, few studies explore how AMC shapes the choice and evolution of governance mechanisms or how these, in turn, affect performance. Although governance is widely studied, few empirical models examine how alliance management capabilities influence governance design or how these governance choices affect alliance performance. The review shows that most studies analyse these variables in isolation, lacking integrated models that reflect their dynamic interactions.

The following section outlines the conceptual model of this study, building on these insights to link AMC, alliance governance, and strategic alliance performance.

3. Research Model and Hypotheses

In the context of Iranian pharmaceutical alliances, this study investigates the interconnected effects of alliance management capabilities (AMC), alliance governance (AG), and strategic alliance performance (SAP). Drawing on dynamic capabilities and governance theories, we propose a conceptual model comprising three constructs: AMC, AG, and SAP. This section outlines their definitions, presents the model, and introduces three hypotheses based on existing research.

Table 1: Proposed model constructs

Construct	Definition	Reference
Alliance Governance (AG)	The alliance governance structure encompasses legal, contractual, and relational mechanisms that safeguard partners' interests, coordinate behaviour, and resolve conflicts. AG enables alignment and control, typically through equity ownership, contractual provisions, and trust-based norms.	Kale 2009; Piroozi et al. 2022
Alliance Management Capabilities (AMC)	AMC are dynamic capabilities that represent a firm's ability to manage alliances effectively. They include routines for partner selection, coordination, learning, and trust-building. AMC enhance social capital, reduce uncertainty, and improve alliance outcomes.	Shakeri and Radfar 2017; Piroozi et al., 2022; Al-Tabbaa et al. 2023
Strategic Alliance Performance (SAP)	SAP reflects the extent to which alliance objectives are achieved. Performance can be evaluated across several dimensions: economic (e.g., financial returns), strategic (e.g., innovation or market access), operational, relational, and learning.	Russo and Cesarani, 2017; Piroozi et al. 2021

Figure 1 presents the proposed model which posits that AMC directly influences both AG and SAP, while AG itself positively affects SAP. The next sections elaborate on these hypothesized relationships.

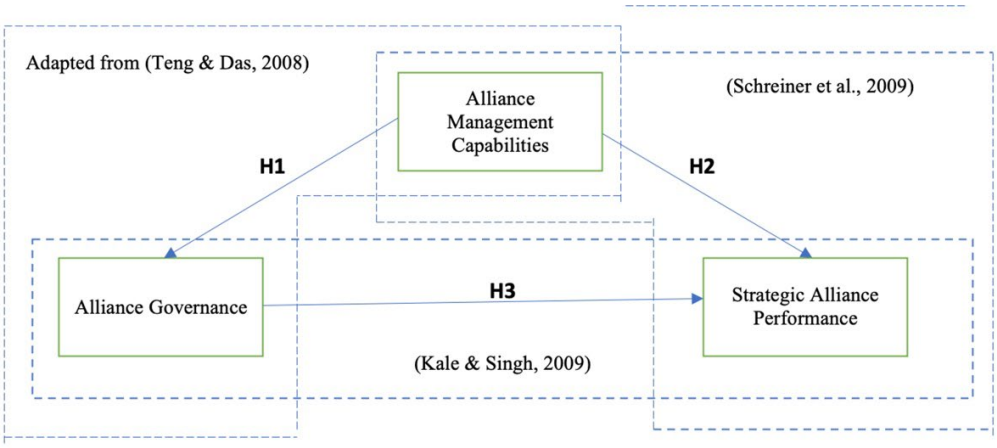

Figure 1: Proposed model; Effect of alliance capabilities on alliance governance and alliance performance

Firms with higher AMC are more likely to design and implement effective governance mechanisms. These capabilities are developed through alliance experience and involve knowledge-sharing routines, conflict resolution, and alignment of strategic intent (Vurro et al. 2023; Gonçalves and da Conceição 2008; Kale and Singh 2007). Firms with mature AMC can configure governance mechanisms to suit alliance complexity.

Robson et al. (2019) argue that AMC includes "formulation capability," which supports contract design and negotiation. Additionally, Teng and Das (2008) states that alliance management capability influences the style of alliance governance chosen. In this sense, AMC shapes governance strategy to match the alliance context.

H1. Alliance Management Capabilities have a positive impact on Alliance Governance.

AMC enables firms to generate alliance value by managing complexity, maintaining trust, and adjusting strategies over time. Organizations with robust alliance management capabilities have established procedures for efficiently managing alliances (Widjaja-Adhi et al. 2025; Shakeri and Radfar 2017).

AMC encompasses skills like coordination, resource integration, and knowledge transfer—each crucial for achieving desired performance. A company's accumulated tacit knowledge regarding resource renewal, embedded in its routines and behavioural patterns, allows it to achieve a competitive advantage (Schreiner et al., 2009). The learning process embedded in alliance management routines reinforces capabilities and enables long-term alliance success (Kale and Singh 2007; Shakeri and Radfar 2017).

H2. Alliance Management Capabilities positively affect Strategic Alliance Performance.

Governance design influences a firm's ability to manage resources, reduce opportunism, and achieve alliance goals. Agency theory posits that formal controls (e.g., contracts) are essential to aligning interests and preventing misbehaviour (Kale and Singh 2009; Sacchetti and Catturani 2021).

In strategic alliances, governance takes the place of internal control mechanisms and serves as a tool to manage double moral hazard risks. The chosen governance structure shapes collaboration quality, resource flow, and strategic alignment (Daidj 2017). Alliance governance, facilitates trust, reduces monitoring costs, and enables flexible adaptation (Faems et al. 2008).

H3. Alliance Governance positively affects Strategic Alliance Performance.

In summary, this study proposes a model in which AMC serves as both a driver of governance structures and a direct contributor to alliance success. By testing these hypotheses using empirical data, we aim to validate how capability-building and governance interact to enhance performance in strategic partnerships.

4. Empirical Methodology

This study aims to examine the interrelationships between alliance management capabilities (AMC), alliance governance (AG), and strategic alliance performance (SAP) within the pharmaceutical sector in Iran. The

conceptual model was empirically tested using a structured questionnaire distributed among alliance professionals in pharmaceutical firms.

The questionnaire consisted of two main sections: (1) demographic information about respondents and their organizations, and (2) items measuring the key constructs: AMC (adapted from Shakeri and Radfar 2017; Goncalves & Goncalves 2008), AG (from Ratzmann 2016), and SAP (based on Lavie et al. 2012; Yang 2009; Shakeri and Radfar 2017). Items were rated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree).

The instrument was translated into Farsi, the native language of respondents, and pretested in a pilot study to ensure clarity and relevance. Based on pilot feedback, minor adjustments were made to improve interpretability and reliability prior to the main data collection phase.

4.1 Data Collection

Iran's pharmaceutical sector plays a pivotal role in national healthcare and economic resilience, although was in the face of geopolitical and economic instability (Cheraghali 2017). Despite political challenges, the Iranian pharmaceutical market has grown steadily and is projected to reach US$8.16 billion in 2025, with oncology pharmaceuticals accounting for US$1.49 billion. The sector is expected to grow at a 4.43% CAGR through 2029 (Statista 2025). Strategic alliances are a key mechanism for driving innovation and capacity expansion in this sector. This study used firms as the primary unit of analysis. The sample included pharmaceutical companies from across the value chain—manufacturers, importers, and distributors. Eligible respondents were selected based on their active roles in alliance design, management, or decision-making. These included CEOs, business development executives, sales managers, and quality assurance personnel. A random sample of 800 companies was contacted via LinkedIn, targeting senior professionals responsible for alliance operations. A total of 193 complete and valid responses were received, yielding a response rate of 25%.

Table 2: Sample Characteristics

Characteristics	Sample (N = 193)	%
Position		
CEO / Board	45	23.3%
Senior Managers	29	15.0%
Commercial / Business Dev.	42	21.7%
Sales & Marketing	25	13.0%
Supply Chain / QA / Int'l Affairs	23	11.9%
Other	29	15.0%
Experience (Years)		
2–10	101	52.3%
11–20	72	37.3%
>20	19	9.9%
Company Type		
Manufacturers	108	56.0%
Import / Distributor	49	25.4%
Mixed / Holding	36	18.6%
Ownership		
Private	170	88.1%
Government / Mixed	23	11.9%

This diverse and experienced sample offers a representative view of alliance dynamics across the pharmaceutical value chain in Iran. The next section presents the results of the analysis based on this dataset.

5. Analysis, Results

This section presents the findings of the study examining the relationships between alliance management capabilities (AMC), alliance governance (AG), and strategic alliance performance (SAP). Partial Least Squares Structural Equation Modeling (PLS-SEM) was used due to its suitability for theory-driven causal models and small to medium sample sizes (Hair et al. 2011).

The analysis followed a two-step approach using SmartPLS 4.0; first, measurement model assessment, and second, structural model evaluation (Hair et al. 2013).

5.1 Measurement Model Assessment

The reliability and validity of the constructs were assessed using composite reliability, average variance extracted (AVE), and discriminant validity. As shown in Table 3, all composite reliability values exceeded 0.85, and Cronbach's alpha values were within the acceptable 0.70–0.90 range, indicating strong internal consistency.

Indicator reliability was confirmed, with all outer loadings >0.70. AVE values were all >0.5, confirming convergent validity. Discriminant validity was evaluated using Fornell-Larcker criteria, cross-loadings, and the Heterotrait-Monotrait ratio (HTMT). All thresholds were met; cross-loadings showed each item loaded highest on its intended construct. Square roots of AVE exceeded inter-construct correlations. HTMT ratios were all below 0.9.

These results confirm that the constructs are both reliable and valid.

Table 3: Construct reliability: Composite reliability, 0.7<Cronbach's alpha<0.9, and Convergent validity: AVE>0.5

Construct	Cronbach's Alpha	Composite Reliability	AVE
AMC	0.862	0.916	0.785
AG	0.858	0.913	0.779
SAP	0.893	0.916	0.609

5.2 Structural Model Results

Before model estimation, multicollinearity was tested using variance inflation factors (VIF). All VIF values were below 5, confirming the absence of collinearity. Path coefficients and model fit were assessed using bootstrapping. Figure 2 presents the structural model results.

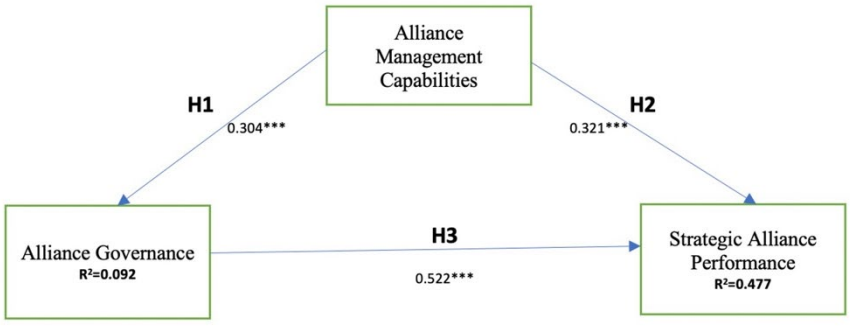

Figure 2: Results of the structural model analysis. ***significant at p<0.001

AMC explains 9.2% of AG variance, while AMC and AG together explain 47.7% of the variance in SAP. Additionally, the indirect effect AMC → AG → SAP was statistically significant (β = 0.159), indicating that AG partially mediates the AMC–SAP relationship.

Table 4: Bootstrap results: hypothesis results

Hypothesis	Path	β	t-value	p-value	F2	Conclusion
H1	AMC → AG	0.304	4.02	0.000	0.102	Supported (small effect)
H2	AMC → SAP	0.321	4.99	0.000	0.178	Supported (medium effect)
H3	AG → SAP	0.522	7.17	0.000	0.472	Supported (large effect)

These findings validate all three hypotheses. AMC has both a direct and indirect influence on alliance performance, with AG serving as a mediating mechanism. The results support the argument that strong alliance management capabilities are essential not only for building governance structures but also for enhancing strategic outcomes.

6. Discussion

This study offers strong empirical validation of the hypothesized relationships among Alliance Management Capabilities (AMC), Alliance Governance (AG), and Strategic Alliance Performance (SAP), highlighting how dynamic managerial capacities and governance systems jointly contribute to alliance effectiveness. The findings reinforce that AMC—defined as the ability to coordinate, learn from, and manage partnerships—is a critical antecedent to both robust governance and alliance success. Firms with mature AMC are significantly more capable of designing governance systems that mitigate risk and align partner interests. These capabilities, developed over time through structured routines and experiential learning, enable organizations to implement both contractual and relational mechanisms tailored to specific alliance contexts (Schilke and Goerzen 2010). The statistical support for this relationship confirms that effective governance is not simply a structural feature, but a manifestation of accumulated internal capacity.

Furthermore, the direct link between AMC and SAP emphasizes that alliance success is strongly influenced by how well a firm manages its collaborations. Capabilities such as accessing to critical resources, knowledge sharing, trust-building, and conflict resolution are shown to drive not only operational benefits but also strategic outcomes like innovation, learning, and competitive positioning (Al-Tabbaa & Zahoor, 2024; Schilke and Goerzen 2010; Goncalves & Goncalves 2008). Our findings echo Al-Tabbaa et al. (2023) in asserting that internal capacity building is essential for sustaining long-term partnerships and achieving higher alliance performance. Equally important, the validated relationship between AG and SAP demonstrates that governance plays a central role in enabling alliances to function smoothly. Well-crafted governance frameworks—whether based on formal contracts or informal norms—reduce opportunism, facilitate coordination, and set clear performance standards (Ratzmann 2016; Daidj 2017). These structures, especially when aligned with agency theory, help address asymmetries between alliance partners, ensuring consistency and transparency in expectations.

Crucially, this study also identifies AG as a significant mediating mechanism between AMC and SAP. The indirect effect (β = 0.159) highlights that the benefits of AMC are most fully realized when they are channeled through appropriate governance frameworks. This insight supports the view that capabilities and governance are interdependent, not isolated. Governance design both reflects the firm's maturity in alliance management and serves as the mechanism through which these capabilities produce measurable value (Sacchetti and Catturani 2021; Kale & Singh 2009). Rather than being a mere structural add-on, governance is a strategic lever enabled by and dependent upon managerial capabilities.

Theoretically, this study contributes a unified model that integrates AMC, AG, and SAP into a cohesive performance framework, answering prior calls for empirical work that connects dynamic capabilities and governance structures (Mamédio et al. 2019; Zahoor et al. 2023). Whereas earlier literature often examined these elements in isolation, our model positions governance as both a dependent outcome of AMC and an enabler of performance. This reinforces the dynamic capabilities perspective, which argues that firm-specific, path-dependent resources such as AMC are essential for sustaining competitive advantage in turbulent environments. By demonstrating that alliance governance enhances the effectiveness of AMC, the study advances a more nuanced understanding of how firms can leverage internal routines for external coordination success.

From a managerial standpoint, the findings offer actionable insights. First, organizations must recognize that AMC is not innate but must be actively cultivated through structured training, post-alliance evaluation, and process formalization. Firms that document alliance lessons and embed them in formal routines can improve future readiness and performance predictability. Second, governance should be treated as an evolving and strategic tool. Rather than applying generic governance templates, firms should tailor mechanisms to fit alliance lifecycle stages, relational dynamics, and strategic goals. A firm with high AMC is better positioned to make these adaptive governance choices, balancing formal control with flexibility as alliances evolve. Particularly in complex and volatile industries such as the Iranian pharmaceutical sector, these insights are highly relevant. In environments where firms must simultaneously navigate regulatory uncertainty, technological change, and resource constraints, AMC functions as a key differentiator. Companies that invest in building alliance expertise and governance agility can better manage environmental turbulence, absorb shocks, and achieve higher performance in their collaboration. Effective AMC also enables firms to tap into broader ecosystems, allowing faster market entry, reduced coordination costs, and improved alliance outcomes—factors that are critical for firms embedded in highly interdependent value chains.

7. Conclusion

While the study offers significant insights, it also presents limitations that suggest avenues for future research. The analysis did not disaggregate alliance types (e.g., R&D vs. commercial alliances) or firm roles (e.g., manufacturer vs. distributor), which may influence the strength of AMC–AG–SAP relationships. Exploring these distinctions could yield more targeted strategies for capability and governance development. Moreover, a comparative study across national contexts could further clarify how institutional environments mediate the interplay between capabilities and governance. This would enhance the generalizability of the model and offer guidance for firms expanding across borders. In conclusion, this study demonstrates that alliance success is driven by the interplay between internal managerial capabilities and external governance mechanisms. AMC enables firms to navigate complexity, while AG ensures coordination and control. Together, they form an integrated system that enhances alliance performance. The validated model provides both theoretical advancement and practical guidance, particularly for firms operating in high-stakes, resource-dependent sectors. By investing in AMC and designing responsive governance structures, firms can transform alliances from risky undertakings into strategic vehicles for growth, innovation, and sustained competitive advantage.

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