Management Control Systems and Partnerships in Driving Innovation and Business Performance: A Systematic Literature Review

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ABSTRACT

The increasing complexity of business environments driven by digital transformation and sustainability challenges has heightened the importance of understanding how management control systems and alliance strategies jointly influence innovation capacity and business performance. Therefore, this study aims to conduct a systematic literature review and synthesize recent research on the interrelationship between management control systems, alliance strategies, innovation, and firm performance to identify emerging themes, research gaps, and theoretical contributions. Using the PRISMA approach, 22 peer-reviewed articles published between 2020 and 2025 were selected from the Scopus, Web of Science, and DOAJ databases and analyzed for conceptual and methodological insights. The findings reveal that management control systems and alliance strategies play a significant role in enhancing innovation capability and improving business performance, while digitalization and sustainability emerge as crucial contextual determinants. However, existing studies have yet to fully explain how these constructs dynamically interact within technology-driven and uncertain environments to support sustainable innovation. Based on this synthesis, the study proposes a conceptual model integrating management control systems and alliance strategies to achieve superior innovation and performance outcomes and suggests that future research employ longitudinal and cross-industry designs to validate and extend the proposed framework.

Keywords*: Alliance Strategies, Business Performance, Innovation Capabilities, Management Control System, Sustainability, Systematic Literature Review.*

ABSTRAK

Meningkatnya kompleksitas lingkungan bisnis yang dipengaruhi oleh transformasi digital dan tuntutan keberlanjutan menjadikan pemahaman mengenai hubungan antara management control systems dan strategi aliansi semakin penting dalam meningkatkan kapasitas inovasi dan kinerja bisnis. Oleh karena itu, penelitian ini bertujuan untuk melakukan tinjauan literatur sistematis dan mensintesis penelitian terkini yang membahas keterkaitan antara management control systems, strategi aliansi, inovasi, dan kinerja perusahaan guna mengidentifikasi tema utama, kesenjangan penelitian, serta kontribusi teoretis yang muncul. Dengan menggunakan pendekatan PRISMA, sebanyak 22 artikel terpublikasi pada periode 2020–2025 yang diambil dari basis data Scopus, Web of Science, dan DOAJ dianalisis untuk memperoleh wawasan konseptual dan metodologis. Hasil kajian menunjukkan bahwa management control systems dan strategi aliansi berperan signifikan dalam meningkatkan kemampuan inovasi dan kinerja perusahaan, sementara digitalisasi dan keberlanjutan muncul sebagai faktor kontekstual penting yang memengaruhi hubungan tersebut. Namun, penelitian sebelumnya belum sepenuhnya menjelaskan bagaimana konfigurasi management control systems dan strategi aliansi berinteraksi secara dinamis dalam lingkungan berbasis teknologi untuk mendukung inovasi berkelanjutan. Berdasarkan sintesis tersebut, penelitian ini mengusulkan model konseptual yang mengintegrasikan management control systems dan strategi aliansi untuk mencapai peningkatan inovasi dan kinerja yang berkelanjutan serta

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merekomendasikan penelitian lanjutan dengan desain longitudinal dan lintas industri guna memvalidasi dan memperluas kerangka yang diusulkan.

***Kata kunci**: Strategi Aliansi, Kinerja Bisnis, Kapabilitas Inovasi, Sistem Pengendalian Manajemen, Keberlanjutan, Tinjauan Literatur Sistematis.*

INTRODUCTION

The current global economic climate is highly competitive, where innovation is crucial to maintain business performance. Management control systems and business strategies are tools to support innovation through resource management, inter-divisional collaboration, and risk mitigation. Management control systems, such as the balanced scorecard and performance matrix, guide organizational behavior toward achieving strategic objectives (Simons, 1994; Ferreira & Otley, 2009; Broadbent & Laughlin, 2009). Business strategies such as joint ventures and strategic partnerships enable companies to access external knowledge and resources, and support innovation (Teece, 2010; Al-Tabbaa & Zahoor, 2024). Despite their relevance, the synergistic contribution of management control systems and business strategies to developing innovation capabilities and business performance remains underexplored, particularly in dynamic environments such as digitalization and market sustainability.

Management control systems are no longer confined to traditional financial monitoring but have evolved into dynamic tools for learning and innovation. Interactive controls, for instance, encourage open dialogue, experimentation, and adaptation to environmental uncertainty (Simons, 1994). These mechanisms enable firms to balance efficiency with flexibility, supporting both the exploitation of existing competencies and exploration of new opportunities (Henri, 2006). Similarly, strategic alliances have moved beyond transactional collaboration to become platforms for continuous learning and innovation. Through partnerships, firms can access novel technologies, market insights, and institutional knowledge that would be difficult to develop internally. However, without effective control systems, alliances may suffer from misaligned objectives, coordination failure, and limited knowledge integration.

Therefore, the interplay between management control systems and alliance strategies represents a crucial area for understanding how firms can achieve innovation-driven performance. Management control systems can facilitate trust, information sharing, and mutual adaptation within alliances by providing structure and accountability, while alliance strategies can enhance the effectiveness of management control systems by introducing new sources of knowledge and strategic flexibility. Yet, empirical evidence on how these two mechanisms jointly contribute to innovation capability and business performance is still limited and fragmented.

The accelerating pace of digital transformation and the growing emphasis on sustainability further intensify the need to revisit this relationship. Digital technologies have reshaped control processes through real-time analytics, integrated data systems, and agile decision-making (Syed, 2023; Seppänen et al., 2023; Fähndrich, 2023; Ambasht, 2023). Likewise, sustainability imperatives demand that control systems incorporate environmental and social metrics alongside financial outcomes. These developments suggest that the integration of management control systems and alliance strategies may not only enhance innovation efficiency but also ensure long-term strategic resilience.

Despite the growing body of research on Management Control Systems (MCS) and alliance strategies, several gaps remain. First, although management control systems and alliance strategies individually contribute to enhancing innovation and firm performance, their combined effects have been scarcely examined. Most existing studies Rodrigues et al. (2021) and Laguir et al. (2022) focus on specific contexts, leaving a lack of generalizable frameworks for integrating management control systems and alliances across industries. Second, prior research often assumes stable environments and overlooks the impact of contextual dynamics, such as digital disruption or geopolitical shifts, on

management control systems-alliance configurations. Studies by Oanh et al. (2024) and Al-Tabbaa and Zahoor (2024), for instance, do not address how environmental uncertainty influences these relationships. Finally, the majority of studies adopt a firm-level perspective, neglecting multi-level dynamics that occur at individual, team, or network levels. While Sarabi and Tobaro (2025) consider network-level alliances, the role of individual or team-level controls within alliances remains underexplored. Addressing these gaps is crucial for developing a more comprehensive understanding of how management control systems and alliance strategies jointly drive innovation and performance across different contexts.

Given these considerations, this study aims to examine how management control systems and alliance strategies interact to influence innovation and business performance. Specifically, it seeks to identify the mechanisms through which management control systems support alliance-based innovation, analyze the mediating role of innovation capability in linking management control systems and performance outcomes, and explore the moderating effects of environmental dynamism, such as digitalization and sustainability pressures. This study contributes to the growing body of research that bridges management accounting and strategic management, emphasizing the importance of control–collaboration alignment in achieving sustainable competitive advantage.

LITERATURE REVIEW

Management Control Systems

Management control systems are formal and informal systems that guide organizational behavior in achieving its strategic goals (Strauß & Zecher, 2013; Anthony & Govindarajan, 2014; Schäffer et al., 2015; Chandy et al., 2021; Biswas & Akroyd, 2022; Einhorn et al., 2024; Islamiyah et al., 2024). Recent research examines the role of management control systems in enhancing a company's innovation capabilities. For example, research by Oanh et al. (2024) found that management control systems serve as Key Performance Indicators (KPIs) in increasing innovation by gradually aligning resources with strategic objectives, while interactive management control systems, such as participatory budgeting, support fundamental innovation through experimentation.

Similarly, Cahyono (2023) demonstrated that the balanced scorecard combines financial and non-financial measures to stimulate innovation in knowledge-based companies. However, management control systems can also hinder innovation if companies are too rigid in developing and creating new products. Schaltegger and Wagner (2006), Cao and Zeng (2019), and Hasu et al. (2025) argue that traditional management control systems often focus solely on financial measures and do not focus on non-financial innovations such as sustainability. This gap shows that a more adaptive management control system scheme is needed to align flexibility and control.

Alliance Strategies and Innovation

Business strategies such as business networks and joint ventures provide companies with opportunities to apply external knowledge and resources to innovate. Al-Tabba and Zahoor (2024) explain that an organization's ability to effectively manage collaborative relationships with alliance partners to achieve shared goals can enhance fundamental and incremental open innovation in SMEs through various collaborations between partners. Similarly, Qile et al. (2020) concluded that blockchain-based companies facilitate supply chain innovation by increasing collaboration and transparency. Alliance diversity also impacts innovation outcomes. Sarabi and Tubaro (2025) noted that multi-connectivity in alliance portfolios fosters knowledge spillovers, enhancing innovation capabilities. However, managing diverse alliances poses challenges, such as coordination costs and cultural misalignment, as discussed by Kostova et al. (2016).

Business Performance and Contextual Factors

Management control systems directly impacts business performance by aligning organizational activities with strategic objectives. Rossing (2013) found that management

control systems in multinational companies improve financial performance by integrating result and action controls. Recent studies, such as Quesado et al. (2024), emphasize that management control systems incorporating sustainability metrics enhance non-financial performance, such as stakeholder trust and brand reputation. Interactive management control systems also mediate the relationship between innovation and performance. Henri and Journeault (2010) demonstrated that strategic control systems indirectly boost economic performance by supporting environmental innovation. However, over-reliance on diagnostic controls can stifle performance in dynamic environments, as noted by Quattrone and Hopper (2005).

Alliance strategies contribute to business performance by leveraging external resources and capabilities. Kareska (2025) found that cooperative strategies, such as platform-complementor relationships, enhance market power and financial performance in technology-driven industries. Similarly, Thatchenkery and Piezunka (2025) noted that alliance portfolios with diverse partners improve firm resilience and performance under external shocks. However, alliance performance depends on relational factors. Yang et al. (2024) highlighted that trust and knowledge sharing moderate the impact of alliances on performance, suggesting the need for robust alliance governance mechanisms.

Few studies explicitly integrate management control systems and alliance strategies. Laguir et al. (2022) found that management control systems bolsters analytics capabilities in alliances, enhancing competitiveness by translating data insights into strategic actions. Similarly, research by Rodrigues et al. (2021) demonstrated that management control systems in foreign subsidiaries foster open innovation between corporate objectives and business strategy. However, this research focused on specific conditions, such as digital transformation and multinational corporations, so the deeper integration between management control systems and business strategy remains unexplored.

RESEARCH METHODS

This study used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach for open-ended and expandable observations (Page et al., 2021). Furthermore, the Systematic Literature Review (SLR) approach is suitable for combining diverse literature to identify patterns, gaps, and recommend future research directions (Danese et al., 2018; Cabrera et al., 2023; Sauer & Seuring, 2023; Marzi et al., 2025; Ningsih & Evana, 2025).

The aim of this Systematic Literature Review (SLR) is threefold: to synthesize existing evidence on how management control systems and business strategies influence innovation capabilities and business performance; to identify research gaps regarding the interaction between these two mechanisms; and to provide actionable insights for both academic research and managerial practice. To ensure relevance and rigor, the analysis focuses on 22 peer-reviewed articles published between 2020 and 2025, sourced from Scopus, Web of Science, and DOAJ, and analyzed following the PRISMA methodology. The literature search employed keywords including "management control system," "business strategy," "innovation capability," and "business performance," combined using Boolean operators (and, or) to filter relevant studies (see Table 1 for inclusion and exclusion criteria). The final search string was: ("Management Control Systems" or "MCS") and ("Business Strategies" or "Strategic Business" or "Interorganizational Collaboration") and ("Innovation Capabilities" or "Innovation") and ("Business Performance" or "Organizational Performance") and ("2020-2025"), ensuring comprehensive coverage of relevant literature. The initial search yielded 342 articles (Scopus: 198, Web of Science: 112, DOAJ: 32). After removing duplicates (n=94), 248 articles underwent title and abstract screening. Following full-text review, 22 articles met the inclusion criteria. Figure 1 illustrates the PRISMA flow diagram.

Table 1. Inclusion and Exclusion Criteria

Inclusion	Exclusion
Peer-reviewed articles between 2020 and 2025	Articles outside the specified timeframe, Non-English articles
Indexed in Scopus, Web Science, or DOAJ	Conference proceedings, book chapters
Focused on MCS, alliance strategies, innovation capabilities, and business performance	Articles not addressing MCS, alliance strategies, innovation capabilities, or business performance
Empirical, theoretical, or review articles	Non-peer-reviewed sources

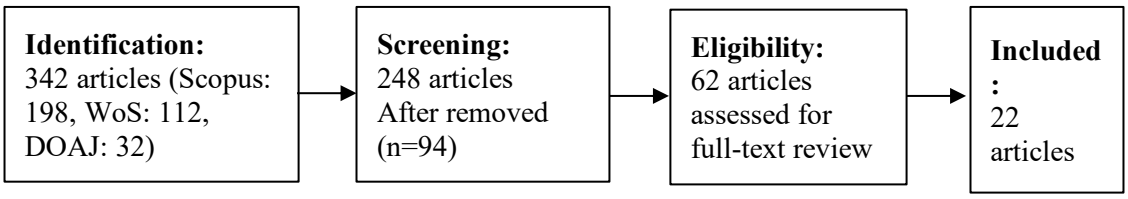

Figure 1. PRISMA Flow Diagram

Articles were analyzed using thematic coding in NVivo, focusing on MSC types, alliance strategies, innovation outcomes, and performance metrics. Bibliometric analysis via VOSviewer identified co-occurrence of keywords and research clusters.

RESULTS

Overview of Selected Articles and Research Methods

The 22 articles spanned various industries, as shown in Table 2, including manufacturing, higher education, and technology sectors. Key themes included digital transformation, sustainability, and strategic collaboration. Most studies (n=15) employed quantitative methods, with Structural Equation Modeling (SEM) prevalent, while qualitative case studies (n=5) and mixed methods (n=2) provided contextual insights.

Table 2. Summary of the 22 Studies Included in the Review

No	Authors (Year)	Journal / Source	Method	Focus / Context	Key Findings
1	Tu Le et al. (2024)	Cogent Business & Management	Bibliographic study	MCS for sustainable development	Interactive MCS enhances innovation and sustainability
2	Al-Tabbaa and Zahoor (2024)	Journal of Business Research	Quantitative	SME alliances	Alliance capability boosts innovation and international expansion
3	Quesado et al. (2024)	Sustainability	Bibliometric analysis	Sustainability & MCS	Sustainability metrics improve non-financial performance
4	Laguir et al. (2022)	Decision Support Systems	Quantitative	Data analytics & MCS	Analytics capabilities enhance competitiveness
5	Rodrigues et al. (2021)	Journal of Open Innovation	Case study	MNC subsidiaries	MCS supports open innovation alignment
6	Cahyono (2023)	Taylor & Francis	Qualitative	Knowledge-based firms	Balanced scorecard fosters an innovation culture
7	Hasu et al. (2025)	Corporate Social Responsibility & Environmental Management	Quantitative	SMEs sustainability	MCS supports sustainability strategy and financial results
8	Henri and Journeault (2010)	Accounting, Organizations and Society	Quantitative	Eco-control	MCS indirectly boosts economic performance

No	Authors (Year)	Journal / Source	Method	Focus / Context	Key Findings
9	Schaltegger and Wagner (2006)	IJ Accounting, Auditing & Performance Evaluation	Conceptual	Sustainability	MCS focuses on sustainability indicators
10	Cao and Zeng (2019)	Yokohama Int. Social Science Studies	Literature review	MCS & sustainability reporting	Integration of MCS with sustainability reporting
11	He et al. (2020)	British Journal of Management	Conceptual	Digital alliances	Blockchain increases collaboration & transparency
12	Sarabi and Tubaro (2025)	Critical Perspectives on Int. Business	Network analysis	Water infrastructure alliances	Multi-connectivity drives innovation
13	Kareska (2025)	Challenges and Opportunities	Conceptual	Tech-driven industries	Cooperation enhances market power
14	Thatchenkery and Piezunka (2024)	Administrative Science Quarterly	Mixed-method	Innovation networks	Partner diversity improves resilience
15	Yang et al. (2024)	Journal of Business & Industrial Marketing	Quantitative	Firm alliances	Trust moderates the alliance–performance link
16	Plesner Rossing (2013)	Management Accounting Research	Case study	MNCs	MCS integrates action & result controls for performance
17	Quattrone and Hopper (2005)	Accounting, Organizations and Society	Qualitative	Multinationals	Diagnostic controls may stifle adaptability
18	Ferreira and Otley (2009)	Management Accounting Research	Theoretical	Performance management	Framework for analyzing MCS design
19	Strauß and Zecher (2012)	Journal of Management Control	Review	MCS typology	Distinguishes formal and informal controls
20	Teece (2010)	Long Range Planning	Conceptual	Dynamic capabilities	Strategy–innovation linkage explained
21	Simons (1995)	Harvard Business School Press	Conceptual	Levers of control	Foundational theory of MCS
22	Marzi et al. (2025)	Int. Journal of Management Reviews	Methodological	SLR methods	Provides steps for systematic review analysis

The breadth of industries represented in the selected studies highlights the generalizability of the findings, suggesting that MCS and alliance strategies are relevant for diverse organizational contexts. For instance, in manufacturing, MCS often emphasize operational efficiency, process standardization, and cost control, whereas in technology sectors and research-driven industries, MCS support experimentation, digital innovation, and rapid product development. Qualitative studies provide deeper insight into organizational contexts, revealing how culture, leadership style, and managerial digital competencies shape the effectiveness of MCS and alliances. Meanwhile, mixed-method studies combine the strengths of quantitative and qualitative approaches, allowing both measurement of causal effects and rich interpretation of contextual dynamics. The diversity in methodology and industry focus underscores the need for a comprehensive understanding of how MCS and alliances interact to influence innovation and business performance across different environments.

The Role of MCS and Alliance Strategies in Driving Innovation

Management control systems facilitate strategic alignment and resource efficiency, with recent studies emphasizing digital tools like Business Intelligence (BI) and Artificial Intelligence (AI). Interactive MCS, such as real-time analytics, enhances decision-making and innovation. However, challenges include a lack of digital competencies among managers, hindering MCS adoption. Beyond aligning resources and streamlining decision-making, MCS play a pivotal role in shaping organizational behavior and promoting a culture of innovation (Tu Le et al., 2024). Interactive controls, such as participatory budgeting, real-time analytics dashboards, and cross-functional performance reviews, encourage dialogue and experimentation across departments, which is essential for discovering new ideas and adapting to rapidly changing markets.

Digital tools, particularly AI and BI, not only monitor performance but also provide predictive insights, enabling proactive identification of market opportunities and potential risks. Firms that successfully integrate digital MCS with employee training programs can enhance managerial capabilities, fostering a workforce capable of responding to uncertainty and driving innovation (Rossing, 2013). However, the literature highlights a persistent challenge: managers often lack the digital skills required to leverage these tools effectively, limiting their potential impact. This suggests that MCS adoption is as much a human-capital challenge as a technological one, emphasizing the importance of capability-building initiatives alongside system implementation.

Alliances, including joint ventures and research collaborations, foster innovation by enabling knowledge transfer and resource sharing. Studies highlight the role of network dynamics in biotechnology and life sciences, where multiconnectivity drives innovation. Trust and cultural alignment are critical for alliance success. Alliances serve as conduits for external knowledge, facilitating both incremental improvements and radical innovation. They enable firms to access specialized technologies, complementary skills, and market intelligence that would be costly or time-consuming to develop internally. Network theory suggests that firms embedded in well-connected alliance networks benefit from knowledge spillovers and collaborative learning, which enhances innovation outcomes (Al-Tabbaa & Zahoor, 2024).

Particularly in biotechnology, life sciences, and technology-intensive sectors, multi-partner connectivity fosters open innovation and accelerates the development of new products, services, and processes. Trust, transparent communication, and cultural alignment are crucial to ensuring knowledge flows effectively, while misalignment or coordination failures can hinder innovation (Cahyono, 2023). Furthermore, strategic governance mechanisms, such as clearly defined roles, shared objectives, and conflict-resolution protocols, enhance alliance performance by mitigating potential risks and ensuring sustained collaboration. Collectively, the findings underscore that alliances are not merely transactional relationships but strategic vehicles for co-innovation.

Innovation capabilities, encompassing product, process, and radical innovation, are enhanced by MCS and alliances. Technological capabilities, supported by AI and big data analytics, improve responsiveness and competitiveness. Sustainability-oriented innovation is increasingly prominent, driven by stakeholder demands. Innovation capabilities act as the bridge connecting MCS and alliance strategies to improved business performance. Firms with strong MCS and strategically managed alliances are better equipped to identify knowledge gaps, mobilize resources, and implement new ideas efficiently. Technological capabilities, especially AI-driven analytics and big data platforms, enhance organizational agility, allowing rapid adaptation to market changes, competitive pressures, and emerging technologies (He et al., 2020).

The literature emphasizes that the combination of internal controls and external collaboration enables firms to simultaneously pursue efficiency in existing operations (exploitation) and explore novel opportunities (exploration), aligning with the ambidexterity perspective in innovation management. Additionally, sustainability-oriented innovation has emerged as a critical dimension (Cao & Zeng, 2019). Organizations integrating environmental and social considerations into their innovation

processes can meet stakeholder expectations, comply with regulatory frameworks, and achieve long-term resilience. This suggests that effective innovation management in contemporary contexts requires MCS and alliances to be aligned with both technological and sustainability imperatives.

Integrating MCS and Alliances for Innovation and Performance

Business performance, measured through financial (e.g., ROI) and non-financial (e.g., customer satisfaction) metrics, is positively influenced by management control systems and alliances. Studies confirm that technological integration and collaborative strategies enhance operational efficiency and market competitiveness. This study integrates management control systems into Key Performance Indicators (KPI) tools and interactive mechanisms such as participatory budgeting and alignment of organizational resources with strategic innovation objectives. This is similar to the research conducted by Oanh et al. (2024), which demonstrated that diagnostic management control systems support incremental innovation by ensuring resource efficiency, while interactive management control systems offer extreme innovation by fostering experimentation. Similarly, research by Al-Tabbaa and Zahoor (2024) demonstrated that business strategies, such as joint ventures and strategic collaboration, can increase opportunities for the influx of external knowledge and resources. These business strategies trigger incremental and extreme co-innovation by sharing coordination and knowledge. Business performance, measured by financial (e.g., ROI) and non-financial (e.g., customer satisfaction), positively influences management control systems and business strategies. This is also supported by the research conducted by Quesado et al. (2024) and Kareska (2025), which demonstrates increased market competitiveness and operational efficiency.

The impact of MCS and alliance strategies on business performance is both direct and indirect. Financial performance benefits from resource alignment, operational efficiency, and optimized decision-making, while non-financial outcomes, such as customer satisfaction, brand reputation, and stakeholder trust, are enhanced through innovation-driven initiatives enabled by MCS and alliance collaboration (Henri & Journeault, 2010). Digitalized MCS facilitates real-time monitoring and predictive insights, allowing firms to preempt challenges and capitalize on market trends more effectively. Alliances, particularly those that are diverse and well-governed, expand the firm's access to complementary capabilities and knowledge, increasing its market responsiveness and competitive advantage. Furthermore, the synergy between MCS and alliances amplifies performance outcomes, as internal control mechanisms ensure that collaborative innovation initiatives are strategically aligned, resourced, and executed efficiently. This integrated perspective reinforces the notion that firms can achieve sustainable performance by simultaneously leveraging internal controls and external partnerships.

Digitalization and sustainability emerged as critical contextual factors influencing MCS, alliance strategies, and innovation outcomes. Digital technologies transform control systems by enabling real-time performance monitoring, predictive analytics, and agile decision-making, which are crucial in dynamic environments characterized by technological disruption. Sustainability imperatives compel firms to integrate environmental and social metrics into their control systems and alliance governance structures. Firms that effectively align MCS and alliances with digitalization and sustainability pressures are better positioned to achieve innovation efficiency, operational excellence, and long-term resiliency (Schaltegger & Wagner, 2006). The literature suggests that adaptive MCS designs, multi-level alliance strategies, and context-specific integration of technology and sustainability are essential for achieving synergistic effects on innovation and business performance.

DISCUSSION

This Systematic Literature Review (SLR) links the role of management control systems and business strategy in supporting innovation capability and business performance. Drawing on 22 research articles published from 2020 to 2025, this study has three main

objectives: to gather/combine evidence on how management control systems and business strategy can enhance innovation capability and business performance, to identify gaps in research findings on the relationship between management control systems and business strategy, and to provide new implications/recommendations for further research and business practice. The results of this study demonstrate that both management control systems and business strategy have a positive influence on innovation capability and business performance, with digital technology and sustainability being the main related variables. However, little research has been done on the joint influence of these variables, particularly in dynamic control, intensive technology use, and sustainability orientation. Therefore, the concept of management control systems with a dynamic business strategy needs further research.

Despite this perspective, the integration of management control systems and business strategy remains a key research gap. Recent studies, such as those by Laguir et al. (2022) and Rodrigues et al. (2021), address specific contexts such as digital transformation or multinational corporations, which cannot be generalized. Furthermore, most studies assume a stable business environment, without considering environmental uncertainties such as digital disruption or geopolitical changes that can impact business strategy and management control systems. The proposed dynamic business concept of management control systems can address this gap by offering an adaptive management control system that considers diagnostic and interactive controls, a multi-level business strategy encompassing individual, team, and network dynamics, and a structure sensitive to high-tech or sustainability-focused businesses. This framework builds on theoretical lenses, including Simons' (1994) levers of control and Teece's (2010) dynamic capabilities theory, by incorporating alliance-specific controls and multi-level dynamics.

The results respond directly to the research aims, validating that MCS and alliance strategies drive innovation and performance but revealing gaps in their integration and suggesting a new framework for dynamic contexts. The variable relationships between MCS, alliance strategies, innovation capabilities, and business performance are positive and significant, with digitalization and sustainability reinforcing these impacts. Practically, the framework informs managers to adopt hybrid MCS and multi-level alliance strategies in pursuit of innovation and resilience, while policymakers can apply these findings to inform innovation ecosystems. Future studies need to empirically test the framework through longitudinal and cross-industry research to improve its usefulness and respond to the revealed gaps to ensure alignment with changing market dynamics.

This study proposes a Dynamic Alliance-MCS Framework that integrates responsive MCS design with multi-level alliance strategies to enhance innovation and business performance under environmental uncertainty. Key recommendations include designing hybrid MCS with diagnostic and interactive controls for both incremental and radical innovation, implementing multi-level alliance strategies spanning individual, team, and network dynamics by Al-Tabbaa and Zahoor (2024), configuring context-sensitive arrangements such as blockchain-based or sustainability-focused MCS by Qile et al. (2020) and Quesado et al. (2024), and empirically validating the framework using panel data and mixed methods across industries by Günther et al. (2019).

The proposed structure integrates the perspectives of the Resource-Based View (RBV) and strategic adaptability theory with management control systems and business strategy to support innovation and business performance. By introducing business-specific controls, it expands Simons' (1994) levers of control and further develops Teece's (2010) dynamic capabilities theory for uncertain environments. This hierarchical approach also extends chain theory by linking individual, team, and network dynamics to innovation outcomes. Managers can leverage this framework to design management control systems that drive business-driven innovation, such as incorporating sustainability KPIs into green business initiatives or using interactive controls in technology collaborations. Additionally, policymakers can utilize these insights to formulate strategies that foster innovation ecosystems and support organizational resilience and growth.

CONCLUSION

This systematic review of 22 studies (2020–2025) shows that digital control mechanisms and strategic business approaches jointly enhance innovation capabilities and overall performance. Digital tools such as business intelligence and artificial intelligence help organizations coordinate resources and support innovation, while strategic alliances facilitate knowledge exchange, build trust, and provide access to external expertise, strengthening competitive advantage. The interaction between these internal controls and collaborative strategies improves both financial and non-financial outcomes, including ROI, operational efficiency, and customer satisfaction. Despite these insights, several limitations remain. The combined influence of control practices and strategic partnerships in fast-changing, technology-intensive environments (e.g., industry 4.0) is still insufficiently examined, and the role of sustainability-driven innovation aligned with global SDGs is rarely explored. The dominance of manufacturing cases and wide disciplinary variation also restricts the generalizability of findings, emphasizing the need for broader cross-industry evidence.

Implications highlight the need for organizations to align digital control tools with collaborative routines to accelerate innovation and improve adaptability, while policymakers can strengthen innovation ecosystems by supporting digital capability development and cross-industry partnerships. However, the review also faces limitations, including geographically concentrated samples, limited longitudinal evidence, and inconsistent measurements of innovation capability, which reduce comparability across studies and indicate the need for more standardized frameworks in future research.This review highlights the value of integrating digitalized control systems with alliance-based learning to strengthen innovation, consistent with resource-based and dynamic capabilities perspectives. Organizations are encouraged to invest in digital competencies, real-time analytics, and trust-based collaborative networks to achieve both competitive performance and sustainable impact. Future research should adopt longitudinal designs to capture long-term dynamics, compare diverse industries, and investigate emerging technologies such as blockchain and advanced analytics, to understand how they enhance the interaction between control practices and strategic alliances.

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