Live Streaming Strategies, Organizational Capabilities, Business Performances, and Innovations: Empirical Research from a Multichannel Network Perspective

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Abstract

Live streaming technologies have emerged as transformative instruments in business-to-business (B2B) commerce, enabling real-time engagement, dynamic coordination, and data-driven transactions. This thesis investigates how Multi-Channel Network (MCN) organizations strategically enact various live streaming strategies, including relational bonds strategy and information technology (IT) affordance strategy, through organizational capabilities to enhance B2B performance and innovation. Drawing on the resource-based view (RBV), dynamic capability theory, affordance theory, organizational learning theory, and organizational networking theory, this thesis develops an integrative framework across three empirical papers to examine the mechanisms through which live streaming strategies and organizational capabilities jointly shape digital B2B outcomes. Paper 1 explores the influence of relational bonds strategy, encompassing financial, social, and structural bonds, on strategic and financial performance. It further examines the moderating roles of two distinct organizational learning capabilities, namely exploratory and exploitative learning, in shaping these performance outcomes. Using survey data collected from 211 MCN organizations operating in the Chinese B2B live-streaming market, the findings show that relational bonds strategy significantly enhances both strategic and financial performance, while the two forms of organizational learning exert different contingent effects. Building on these insights, Paper 2 investigates the role of visibility, meta-voicing, and guidance shopping (VMG) IT affordances in shaping MCNs' channel and economic performance. Based on survey data from 229 MCNs, the findings confirm that VMG IT affordances significantly enhance B2B performance outcomes. In addition, exploratory learning and business networking positively moderate these affordance–performance relationships, whereas exploitative learning exerts a negative contingent effect. Paper 3 further examines IT affordances by focusing on triggered attending, trading, and social connecting (TTS) affordances and their influence on organizational innovation. Using the same dataset of 229 MCNs, the findings show that TTS IT affordances significantly enhance organizational innovation. The results further indicate that adaptive capabilities, comprising vigilant market capability, adaptive market experimentation capability, and open marketing capability, positively strengthen the relationship between TTS IT affordances and organizational innovation. Collectively, the three studies provide a comprehensive and integrative understanding of how MCNs leverage various live streaming strategies and organizational capabilities to achieve sustained performance and innovation in digital B2B contexts. This thesis advances RBV, dynamic capability, affordance, organizational learning, and organizational networking perspectives by explaining how relational and technological strategies jointly drive B2B performance and innovation in the live-streaming context. The findings also offer practical managerial implications for MCNs and other digital B2B organizations seeking to optimise digital transformation, customer engagement, and innovation in dynamic B2B markets.

Keywords:

B2B live streaming commerce; Multi-Channel Network (MCN); relational bonds; IT affordance; resource-based view; dynamic capability; organizational learning; organizational networking; adaptive capability; B2B performance; organizational innovation

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Table of Contents

List of Tables

List of Figures

Chapter 1

Introduction

1.1. Introduction

The rapid proliferation of digital B2B platforms and live streaming technologies has transformed the landscape of contemporary business-to-business (B2B) commerce (Liao et al., 2023; Liu et al., 2023a; Xu et al., 2020). For instance, Alibaba's B2B platform 1688.com conducts B2B live streaming operations by marketing industrial products, bulk-order merchandise, and manufacturing solutions directly to wholesalers and retailers (Huakui, 2020; Liao et al., 2023). These B2B live streaming platforms enhance real-time interactions, negotiations, and transactions (Liu et al., 2023b; Zhang et al., 2024). Unlike traditional B2B transactional mechanisms characterised by long negotiation cycles and limited interactivity, B2B live streaming leverages advanced digital technologies and interactive real-time engagement to enhance transparency, streamline transactions, and foster collaborative innovation across organizational boundaries (Liao et al., 2023; Liu et al., 2023a; Liu et al., 2023b). These technological advancements have reshaped procurement, distribution, and sales processes by enabling upstream manufacturers and brand owners to directly showcase products, provide personalised demonstrations, and engage interactively with downstream institutional customers, including wholesalers, retailers, and buying agents (Li et al., 2022; Mao et al., 2022; Wang & Wang, 2021).

At the centre of this digitally driven transformation are Multi-Channel Network (MCN) organizations, functioning as digital intermediaries orchestrating B2B live streaming commerce (Dong & Wang, 2018; TOPKLOUT, 2023). MCNs play a strategic role by integrating multiple stakeholders, managing digital platforms, curating content, coordinating influencers, conducting data analytics, and facilitating inter-organizational interactions (Wang & Wang, 2021). In this situation, MCNs can facilitate the promotion of products and sales transactions between upstream suppliers (e.g., manufacturers) and B2B customers (e.g., wholesalers, retailers, and reselling agents) through live streaming (Wang et al., 2024; Mao et al., 2022). For instance, Pinduoduo's Duoduo Live effectively collaborates with agricultural-focused MCNs to host interactive negotiations and bulk purchasing sessions, directly connecting dispersed farmers and cooperatives with institutional distributors. In such B2B live streaming sessions, professional live streamers demonstrate product quality, negotiate pricing, and instantly address

technical and logistical queries, significantly enhancing supply chain transparency and transactional efficiency (TOPKLOUT, 2024; Zhang et al., 2024). Moreover, Yaowant Network MCN strategically orchestrates B2B live streaming campaigns for brands in the apparel and electronics sectors, such as Proya Cosmetics, improving business relationships and significantly enhancing sales performance through interactive product demonstrations and real-time negotiations (Hupun, 2025; QCC, 2025; Wongkitrungrueng et al., 2020). The operational model of these MCNs diverges substantially from traditional intermediaries, as they act not only as passive transaction facilitators but as active B2B live streaming ecosystem enablers, fostering strategic value co-creation and organizational capability integration across multiple business entities (Mao et al., 2022; TOPKLOUT, 2024).

Among the core strategies that MCNs adopt to navigate the dynamic landscape of B2B live streaming commerce, two distinct live streaming strategies stand out, namely relational bonds strategy and information technology (IT) affordance strategy (e.g., Hu & Chaudhry, 2020; Dong et al., 2016). Together, these strategies underpin the operational and innovation outcomes of MCNs as digital B2B intermediaries (Liao et al., 2023; Mao et al., 2022).

Relational bonds strategy plays a vital role in building and sustaining long-term institutional relationships (Hu & Chaudhry, 2020). This live streaming strategy comprises three dimensions: financial bonds (e.g., favourable pricing schemes and flexible payment options), social bonds (e.g., interpersonal familiarity and trust), and structural bonds (e.g., shared systems and integrated services) (Moderno et al., 2024). While relational bonds strategy has received significant attention in business-to-consumer (B2C) marketing literature (Chen & Lin, 2018; Hu & Chaudhry, 2020; Liu et al., 2022), its strategic application in business-to-business (B2B) digital environments remains relatively underexamined. In the context of B2B live streaming, MCNs act not only as content coordinators but as strategic relationship managers who embed these relational resources into ongoing collaborations with B2B customers (e.g., Shi et al., 2020; Wang & Wang, 2021). These relational bonds reduce transactional uncertainty, foster trust-based procurement, and drive outcomes such as strategic continuity and financial performance (Alagarsamy et al., 2021; Elia et al., 2021). Despite their relevance, prior literature has yet to fully examine how relational bonds influence strategic and financial performance in MCN-led B2B live streaming. Furthermore, little is known about how organizational capability, such as organizational learning, moderates the performance impact of these bonds (Alagarsamy et al., 2021). Paper 1 (Chapter 2), as a preliminary and foundational study, empirically investigates how MCNs deploy relational bonds strategy to shape B2B

performance. This paper also examines the moderating role of organizational learning capabilities, including exploratory learning and exploitative learning, in this strategic relationship (Elia et al., 2021; March, 1991).

Complementing relational mechanisms is IT affordance strategy, which refers to how MCNs perceive and activate the actionable potentials of digital technologies to support strategic objectives (Volkoff & Strong, 2013). More formally, IT affordances represent the possibilities for organizational or individual action that are enabled by the material properties of digital technologies, in relation to the intentions, capabilities, and contextual conditions of users operating within a socio-technical system (Faraj & Azad, 2012; Majchrzak & Markus, 2012). Previous literature identifies two major categories of IT affordances relevant to live streaming technologies: (1) visibility, meta-voicing, and guidance shopping affordances (hereafter VMG IT affordances), and (2) triggered attending, trading, and social connecting affordances (hereafter TTS IT affordances) (e.g., Dong & Wang, 2018; Sun et al., 2019). Specifically, VMG IT affordances enhance the clarity and transparency of market information, enable interactive communication, and offer personalised procurement guidance, facilitating more informed and efficient decision-making processes in complex B2B procurement environments (Volkoff & Strong, 2017; Yan et al., 2023). Conversely, TTS IT affordances emphasise real-time interactivity, dynamic transactions, and enhanced relationship building among business actors (e.g., Dong et al., 2016; Moon, 2020). However, despite their theoretical clarity, existing research primarily addresses IT affordances within consumer-oriented contexts, neglecting the strategic implications for complex B2B operations, channel performance, and innovation (Dong & Wang, 2018; Sun et al., 2019). Moreover, the role of organizational capabilities in moderating these affordance-performance and affordance-innovation relationships remains largely unexplored (e.g., Day, 2011; Do et al., 2022; Yan et al., 2023). Building on insights from Paper 1, this thesis aims to extend the relationships among live streaming strategy, organizational learning as the measure of internal organizational capability, and business performance. Business networking is an external organizational capability that allows MCNs to access market opportunities and exchange knowledge with partners (Burt & Soda, 2021; Zhou et al., 2022). Therefore, Paper 2 (Chapter 3) explores how this organizational capability strengthens the relationship between VMG IT affordances and B2B performance, including both channel and economic outcomes (Burt & Soda, 2021; Do et al., 2022). Further, Paper 3 (Chapter 4) expands the framework by examining the moderating role of adaptive capability; encompassing vigilant market sensing, agile experimentation, and open marketing capabilities; in enhancing the relationship between TTS IT affordances and business innovation outcomes (Day, 2011; Teece et al., 1997). As

adaptive capabilities are critical for dynamically adjusting to rapidly evolving digital environments, investigating the effect of these organizational dynamic capabilities provides deeper insights into how firms translate live streaming strategies into sustained innovation outcomes (Chung, 2019; Damanpour & Aravind, 2011).

Taken together, relational bonds strategy and IT affordance strategies represent two interconnected pathways through which MCNs strategically harness live streaming technology to drive performance and innovation in the B2B landscape. Using Paper 1 as foundational empirical evidence and preliminary insight, this thesis systematically advances knowledge through Papers 2 and 3 by thoroughly examining how different organizational capabilities, including organizational learning (March, 1991; Sima et al., 2024), business networking (Burt & Soda, 2021; Zhou et al., 2022), and adaptive capabilities (Day, 2011; Day & Schoemaker, 2000; Teece et al., 1997), contingently shape the effectiveness of these live streaming strategies. By integrating these strategies and capabilities, this thesis provides a comprehensive theoretical and empirical foundation for understanding the conditions under which MCNs successfully leverage digital live streaming to achieve sustained competitive advantage, superior performance, and robust innovation outcomes in complex B2B digital ecosystems (Liao et al., 2023; Zhang et al., 2024).

1.2. Problem Statement and Research Questions

The central aim of this thesis is to investigate how MCNs' live streaming strategies, specifically relational bonds strategy and IT affordance strategy, interact with various organizational capabilities to shape business performance and innovation outcomes in the context of B2B live streaming commerce. Although live streaming has gained significant traction in business-to-consumer (B2C) domains, its strategic and organizational implications in B2B ecosystems, particularly within MCN-led platforms, remain underexplored and conceptually fragmented (Dong & Wang, 2018; Hu & Chaudhry, 2020; Mao et al., 2022). Existing studies have largely concentrated on consumer-oriented outcomes, emphasising individual-level engagement, real-time purchase behaviours, and transactional convenience (e.g., Hu & Chaudhry, 2020; Sun et al., 2019). Such studies overlook the complexities involved in B2B operations, including performance outcomes and sustained innovation efforts. In particular, three critical gaps emerge. First, the relational bonds strategy has not been sufficiently theorised or empirically tested in B2B live streaming commerce, especially in relation to performance outcomes and organizational learning routines (March, 1991; Moderno et al., 2024). Second, although IT affordance concepts

offer a robust conceptual lens to understand how digital technologies are enacted in context (Volkoff & Strong, 2013), there is limited empirical understanding of how distinct affordance types; visibility/meta-voicing/guidance shopping (VMG) affordance and triggered attending/trading/social connecting (TTS) affordance; impact business outcomes. Last, previous studies tend to treat live streaming as a technical medium, failing to explore how live streaming strategies and organizational capabilities co-evolve to deliver sustained business performance and innovation in complex B2B environments (Eisenhardt & Martin, 2000; Hunt & Madhavaram, 2020; Uzkurt et al., 2024).

To address these gaps, this thesis draws on resource-based view (RBV) theory (Barney, 1991; Elia et al., 2021), affordance theory (Gibson, 1977) and dynamic capability (DC) theory (Teece et al., 1997), arguing that superior B2B outcomes arise not merely from access to relational resources or technological capabilities, but from MCNs' strategic ability to deploy such resources in alignment with internal and external organizational capabilities (Chung et al., 2016; Helfat & Peteraf, 2003). Specifically, this paper explores three forms of organizational capability: (1) organizational learning (exploratory learning and exploitative learning) (Chung & Ho, 2021; March, 1991), (2) business networks (external relationship assets) (Ford & Mouzas, 2013; Mitrega et al., 2012), and (3) adaptive capability (such as keen market perception, agile experimentation, and open marketing) (Hunt & Madhavaram, 2020; Uzkurt et al., 2024) in moderating the effectiveness of live streaming strategies in achieving B2B performance and innovation.

To empirically ground this inquiry, three interlinked papers form the foundation of this thesis:

Paper 1 explores how relational bonds strategy (financial, social, structural bonds) influences B2B strategic and financial (actual data) performance outcomes and how this relationship is moderated by MCNs' organizational learning capabilities (Elia et al., 2021; March, 1991).

Paper 2 builds on these insights by examining the role of VMG IT affordances strategy in improving channel and economic performance (perceptual and actual data), and how these effects are conditioned by organizational learning and business networking capabilities (Burt & Soda, 2021; Do et al., 2022).

Paper 3 focuses on TTS IT affordances and their impact on innovation outcomes, investigating how adaptive capabilities enable MCNs to translate real-time engagement tools into strategic innovation (Day & Schoemaker, 2000; Teece et al., 1997).

By investigating these organizational capability-live streaming strategy dynamics, this study contributes to both theoretical advancement and managerial insights. The results of this thesis can assist MCNs and their upstream principals in strategically navigating digital transformation, enhancing operational effectiveness, and fostering sustainable innovation in the rapidly evolving B2B digital marketplace (Liao et al., 2023; Teece et al., 1997). Therefore, the current theoretical and empirical gaps are threefold. First, existing literature has inadequately examined the application and effectiveness of relational bonds strategy within B2B live streaming contexts, especially regarding its distinct impacts on strategic and financial performance, and how these impacts are contingent upon organizational learning capabilities (Alagarsamy et al., 2021; Elia et al., 2021; Moderno et al., 2024). Second, while IT affordance conceptualisation categorises digital action potentials such as VMG and TTS affordances, prior research predominantly explores these in consumer (B2C) environments, overlooking their strategic implications for B2B performance and organizational innovation outcomes (e.g., Dong & Wang, 2018; Sun et al., 2019; Yan et al., 2023). Third, limited empirical insights exist regarding how different forms of organizational capabilities, including internal capabilities (exploratory and exploitative learning) (Crossan et al., 1999; March, 1991), external capabilities (business networking) (Burt & Soda, 2021; Zhou et al., 2022), and dynamic adaptive capabilities (Day, 2011; Teece et al., 1997), distinctly moderate the relationship between live streaming strategies (relational bonds and IT affordances) and B2B outcomes. Addressing these gaps is critical for providing a comprehensive theoretical foundation and actionable insights for firms navigating complex digital transformations in contemporary B2B digital marketplaces (Burt & Soda, 2021; Day & Schoemaker, 2000; Liao et al., 2023).

Accordingly, this thesis addresses the following research question:

Main RQ: *How and under what conditions do live streaming strategies (relational bonds and IT affordances) and organizational capabilities jointly shape B2B performance and innovation in MCN-led B2B live streaming commerce?*

More specifically, this thesis investigates four targeted research questions:

RQ1: *How do relational bonds strategy and distinct IT affordances (VMG vs. TTS) strategy generate differentiated effects on MCNs' B2B performance and innovation outcomes?*

RQ2: *What roles do two types of organizational learning capabilities (exploratory and exploitative) play in moderating the relationship between relational bonds strategy and B2B (strategic and financial) performance?*

RQ3: *What roles do organizational learning and business networking capabilities play in moderating the relationship between VMG IT affordances strategy and B2B (channel and economic) performance?*

RQ4: *How do adaptive capabilities influence the relationship between TTS IT affordances and organizational innovation?*

By answering these questions, this thesis contributes a multi-layered theoretical framework and empirical insights into how MCNs can strategically deploy live streaming strategies under varying organizational capability conditions to achieve sustained competitive advantage in complex B2B digital ecosystems (Day, 2011; Do et al., 2022; Liao et al., 2023).

1.3. Theoretical Foundations

This research integrates five primary theoretical lenses to develop a comprehensive conceptual framework: the resource-based view (RBV) (Barney, 1991; Elia et al., 2021), dynamic capability (DC) theory (Helfat & Peteraf, 2003; Teece et al., 1997), affordance theory (Gibson, 1977; Volkoff & Strong, 2013), organizational learning theory (March, 1991; Sima et al., 2024), and organizational networking theory (Burt & Soda, 2021; Zhou et al., 2022).

First, the RBV provides the foundational perspective for understanding how MCNs strategically leverage valuable, rare, and difficult-to-imitate relational resources (such as financial, social, and structural bonds) to secure sustained competitive advantage in digital B2B contexts (Barney, 1991; Elia et al., 2021).

Second, DC theory highlights firms' adaptive routines and strategic capabilities necessary to sense environmental changes, seize market opportunities, and dynamically reconfigure resources, including relational and

technological assets, in rapidly evolving digital markets (Helfat & Peteraf, 2003; Teece et al., 1997). DC theory provides a theoretical foundation for understanding how MCNs dynamically deploy diverse IT affordances in alignment with organizational capabilities, ensuring their adaptability and sustained competitive advantage in dynamic B2B environments (D'Ambra et al., 2022; Teece et al., 1997).

Third, affordance theory explains how digital technologies create actionable possibilities that organizations can perceive and enact to support coordination, innovation, and performance outcomes (Gibson, 1977; Volkoff & Strong, 2013). Rather than viewing IT affordances as a set of static features, affordance theory emphasises the relational nature of technology use, highlighting how the innovative value of IT emerges from the interaction between technological properties and organizational actors, routines, and contexts within triadic B2B live-streaming ecosystems (Dong & Wang, 2018).

Fourth, organizational learning theory underscores internal processes through which MCNs absorb, integrate, and apply knowledge to enhance strategic decision-making. This theory clarifies how distinct learning orientations uniquely moderate the effectiveness of relational bonds and IT affordances in driving business performance and innovation (Chung & Ho, 2021; Crossan et al., 1999; March, 1991).

Lastly, organizational networking theory emphasises external relational resources and inter-organizational interactions, which facilitate market knowledge exchange, resource mobilisation, and opportunity identification (Burt & Soda, 2021; Zhou et al., 2022). This theory helps explain how robust business networks strategically amplify the positive impacts of live streaming strategies, particularly VMG IT affordances, on B2B performance outcomes.

Collectively, these theoretical perspectives form a comprehensive foundation, guiding empirical inquiry into how MCNs strategically integrate relational and technological resources with internal and external organizational capabilities to achieve superior performance and innovation in complex B2B digital ecosystems.

1.4. Data Collection

1.4.1. Ethical Approval

This study is conducted in strict accordance with the Code of Ethical Conduct for Research, Teaching, and Evaluation in terms of Human Ethics of Massey University (MUHEC). This research has been approved as a low-risk project by the Massey University Ethics Committee, as outlined in Appendix A. Key issues related to ethical concerns will be considered in this study, including confidentiality, informed consent, and privacy (Bell et al., 2022). The codes of ethical conduct for research involving research participants have been fully studied and implemented. Most importantly, the confidentiality and privacy of all participants' identities can be assured.

1.4.2. Data Framework

The finalised questionnaire, along with a clear instructional cover letter (see Appendix B) emphasising again the need to respond based on current B2B operational practices, was sent to two senior executives from each selected MCN company (e.g., CEOs, Managing Directors, General Managers, CFOs, Marketing Managers) (Podsakoff et al., 2003). Paper 1 is based on a standalone dataset comprising survey responses from 211 MCN firms operating within China's B2B live streaming sector. These data capture both perceptual and objective indicators of strategic and financial performance, and focus on how relational bonds strategies (i.e., financial, social, and structural bonds) interact with organizational learning capabilities (exploratory and exploitative learning) to influence B2B outcomes. This 211-firm dataset forms the empirical and conceptual foundation of the thesis, offering critical preliminary insights that directly inform the design and theorisation of Papers 2 and 3. Building upon the relational and learning constructs established in Paper 1, Papers 2 and 3 draw on a larger, subsequent dataset of 229 firms, which retains core elements from Paper 1 while expanding the measurement scope to include IT (VMG and TTS) affordance strategies, business networking, adaptive capabilities, and innovation outcomes.

Thus, Paper 1 functions as both a conceptual precursor and empirical base that supports the development of a more integrated, capability-oriented framework in the subsequent studies. The progression from Paper 1 to Papers 2 and 3 reflects a cumulative research design that deepens the understanding of how MCNs strategically align live streaming strategies with internal and external capabilities to achieve superior B2B performance and innovation.

1.5. Contributions

This thesis provides substantial theoretical and managerial contributions for scholars and practitioners interested in digital B2B live streaming commerce, relational bonds strategy, IT affordances, organizational capabilities, and

innovation strategies within MCN contexts. Specifically, this thesis contributes to RBV theory, DC theory, affordance theory, organizational learning theory, and organizational networking theory within the context of B2B live streaming. These contributions are systematically articulated through three interconnected empirical studies (Papers 1, 2, and 3), detailed in Chapters 2, 3, and 4, respectively.

Theoretical Contributions from Paper 1 (Chapter 2)

Paper 1 makes several important theoretical contributions to RBV theory and organizational learning theory, and B2B digital ecosystems. First, this study advances the theoretical development of the RBV in the context of B2B live streaming commerce by explicitly examining relational bonds as strategically valuable, rare, and inimitable organizational resources (Anand & Delios, 2002; Barney, 1991; Hart, 1995). By demonstrating that relational bonds significantly and positively enhance both strategic and financial performance of MCNs, this study enriches the RBV literature, highlighting relational bonds as key resources in achieving sustainable competitive advantage in B2B digital contexts (Dangayach & Deshmukh, 2001; Liu et al., 2023a; Schroeder et al., 2002). Consequently, future research on RBV theory can now incorporate relational bonds strategies alongside established resource perspectives (e.g., manufacturing and digital technology strategies) within organizational and B2B strategy studies.

Second, by integrating and empirically testing the moderating role of organizational learning capabilities (Chung et al., 2015; March, 1991), this research extends the theoretical application of organizational learning theory into the domain of relational bonds strategy and B2B performance. Distinguishing clearly between exploratory and exploitative learning, the study reveals novel insights into their differential moderating effects: exploratory learning positively enhances relational bonds strategy effectiveness, whereas exploitative learning negatively impacts the relational bonds-performance relationship. This finding reinforces that organizational learning types need separate consideration, as they exert distinct and significant influences on strategic outcomes in rapidly evolving sectors like the MCN industry (Bettis-Outland et al., 2021; Santos-Vijande et al., 2012; Sima et al., 2024). Thus, the study broadens organizational learning theory's application to the investigation of MCNs' strategic deployment of relational bonds in B2B digital environments.

Third, by validating the efficacy of relational bonds strategy within a B2B setting, this study significantly broadens relational bonds traditionally rooted in B2C contexts (e.g., Gu & Wang, 2016; Hu & Chaudhry, 2020). Existing

literature primarily focuses on relational bonds' role in enhancing consumer engagement, purchasing behaviour, and shopping intentions. This research expands relational bonds' strategic application into B2B contexts, illustrating that MCNs effectively leverage relational bonds strategy to foster trust, reduce transactional uncertainty, and achieve superior strategic and financial outcomes. As such, relational bonds strategy's applicability and theoretical relevance now extend beyond consumer marketing to encompass complex institutional relationships within the MCN-led B2B live streaming commerce environment (Elia et al., 2021; Moderno et al., 2024; Wang & Lee, 2023).

Collectively, as foundational research, Paper 1 contributes empirically grounded insights and preliminary evidence, forming a basis upon which subsequent investigations into IT affordances and other organizational capabilities (Papers 2 and 3) are developed. Thus, Paper 1 provides both a standalone contribution and a crucial theoretical and empirical linkage supporting the integrative framework developed in this thesis.

Theoretical Contributions from Paper 2 (Chapter 3)

Paper 2 significantly extends the conceptual model established in Paper 1, enriching our understanding of live streaming strategies and organizational capabilities within the B2B live streaming context in three key ways.

First, Paper 2 introduces an additional live streaming strategy, namely IT affordances focusing on visibility, meta-voicing, and guidance shopping (VMG), thus complimenting and broadening the initial relational bonds strategy explored in Paper 1. By explicitly examining VMG IT affordances, Paper 2 advances our theoretical comprehension of how digital capabilities strategically enhance transparency, interactivity, and procurement guidance in complex B2B ecosystems (Dong & Wang, 2018; Volkoff & Strong, 2013).

Second, Paper 2 expands the scope of organizational capabilities included in the study by incorporating an external capability, namely business networking, into the conceptual framework. Business networking captures inter-organizational relationships crucial for market knowledge exchange and opportunity identification (Burt & Soda, 2021). By empirically testing how external networks moderate the relationship between VMG IT affordances and performance, Paper 2 responds to scholarly calls for a deeper exploration of external organizational capabilities within digitally driven strategic models (Mitrega et al., 2012; Zhou et al., 2022). This clearly positions external networks as strategic moderators capable of amplifying IT affordances' effectiveness.

Third, Paper 2 broadens the dimensions of B2B channel performance beyond the strategic and financial metrics used in Paper 1 by integrating perceptual measures of channel effectiveness alongside objective economic performance data (Cavusgil & Zou, 1994; Morgan et al., 2004). This methodological advancement provides a richer, more nuanced understanding of how live streaming strategies translate into varied performance outcomes, enhancing both theoretical precision and empirical comprehensiveness.

Building on these advancements, Paper 2 makes several theoretical contributions to DC theory, organizational learning theory, and organizational networking theory within the specific context of MCNs and their B2B digital operations.

In terms of DC theory, Paper 2 conceptualises VMG IT affordances as digitally enabled dynamic capabilities, demonstrating empirically how MCNs can strategically deploy these affordances not merely as static technological functionalities, but as adaptive mechanisms responding effectively to rapidly evolving market conditions (D'Ambra et al., 2022; Teece et al., 1997). By integrating internal and external organizational capabilities into the DC framework, Paper 2 clarifies the contingent conditions under which IT affordances can maximise performance outcomes, thereby enriching DC theory in digital contexts (Mitrega et al., 2012; Santos-Vijande et al., 2012).

Regarding organizational learning theory, Paper 2 extends insights established in Paper 1 by further examining the differential moderating roles of exploratory and exploitative learning in the VMG IT affordances-performance relationship. Findings indicate that exploratory learning positively enhances this relationship, whereas exploitative learning exerts a negative effect, underscoring the dualistic and nuanced role of organizational learning in leveraging digital technologies for superior B2B performance (March, 1991; Sima et al., 2024; Zahra et al., 2006).

Finally, Paper 2 contributes significantly to organizational networking theory by empirically demonstrating that robust external business networks substantially amplify the positive effects of VMG IT affordances on B2B performance outcomes. This theoretical contribution enriches existing understanding by clearly demonstrating how external networks act as pivotal moderators, enhancing the effectiveness of strategic digital capabilities within dynamic and digitally mediated B2B ecosystems (Burt & Soda, 2021; Do et al., 2022).

Taken together, these contributions establish a comprehensive theoretical framework and empirical basis for future research exploring how MCNs strategically combine various live streaming strategies and organizational capabilities to achieve sustained competitive advantage and superior performance in B2B digital contexts.

Theoretical Contributions from Paper 3 (Chapter 4)

Paper 3 advances the overall thesis framework by examining how triggered attending, trading, and social connecting (TTS) IT affordances shape organizational innovation within MCN-led B2B live-streaming ecosystems. Building on affordance theory and the dynamic capability view, this paper makes several distinctive theoretical contributions to B2B innovation research, digital affordance scholarship, and the literature on dynamic capabilities in platform-based contexts.

First, Paper 3 contributes to B2B innovation theory by reframing organizational innovation as a triadic, coordination-based outcome rather than a purely firm-centric or technology-driven process. Unlike prior research that predominantly explores TTS IT affordances within consumer-oriented contexts (e.g., Sun et al., 2019; Moon, 2020), this study positions MCNs as midstream coordinators embedded in triadic structures linking upstream principals, live-streaming platforms, and downstream business customers. The findings demonstrate that innovation in B2B live streaming emerges from how MCNs orchestrate interdependencies across this triad, extending innovation theory toward a more relational and ecosystem-oriented perspective.

Second, this paper advances affordance theory by demonstrating that TTS IT affordances do not operate as static technological features, but rather as organizational action potentials whose innovative value depends on how they are enacted within MCNs' coordination routines. This shifts affordance theory away from an implicit emphasis on technology features or individual user actions, and toward an organizational and relational perspective in which affordances are realised through coordinated practices. This contribution moves affordance theory beyond individual-level use and consumer-oriented contexts, positioning it more firmly within organizational and B2B digital innovation research (Day & Schoemaker, 2000; Teece et al., 1997).

Third, Paper 3 extends the dynamic capability view by identifying vigilant market capability, adaptive market experimentation capability, and open marketing capability as distinct adaptive mechanisms that condition whether, and how, MCNs translate TTS IT affordances into B2B innovation. Rather than treating dynamic capabilities as

a monolithic construct, this paper demonstrates how these adaptive capabilities support differentiated sensing-seizing-reconfiguring mechanisms in a highly dynamic B2B digital environment. In doing so, the study provides a deeper understanding of how adaptive capabilities enable MCNs to recognise TTS IT affordance opportunities, experiment with alternative enactments, and reconfigure coordination routines to achieve innovation (Day & Schoemaker, 2000; Helfat & Peteraf, 2003).

Collectively, these contributions from Paper 3 enrich theoretical discourse by bridging critical gaps in affordance conceptualisation, adaptive capability, and innovation management literature, thereby equipping researchers and practitioners with a robust theoretical framework for understanding innovation dynamics in digital B2B settings. By uncovering these interaction mechanisms, the paper provides a comprehensive theoretical basis that future research can leverage to better understand the enabling conditions and strategic contexts necessary for effective innovation in digitally mediated B2B environments (Töytäri & Rajala, 2015; Volkoff & Strong, 2017).

Overall Theoretical and Managerial Contributions

Overall, this thesis delivers several important theoretical and managerial contributions. By integrating relational bonds strategy, IT affordance conceptualisation, RBV theory, affordance theory, DC theory, organizational learning theory, and organizational networking theory within the context of MCN-driven B2B live streaming commerce, this thesis significantly advances the existing research scope. Theoretically, it clarifies how MCNs strategically leverage live streaming strategies, namely relational bonds strategy and IT affordance strategy, in conjunction with organizational capabilities, to drive superior business performance and sustained innovation. The findings of this thesis provide a comprehensive foundation for future empirical and conceptual inquiries. Managerially, the findings offer actionable insights for MCNs and related B2B digital businesses, guiding their strategic alignment of live streaming strategy, such as relational bonds and IT affordance strategies, with organizational capabilities. Managers of B2B digital organizations can cultivate their exploratory learning, business networking, and adaptive capabilities to achieve better B2B success. Practically, this research equips managers with clear, evidence-based recommendations for effectively navigating digital transformation, enhancing relational management, optimising channel effectiveness, and fostering sustainable innovation in complex, digitally mediated B2B ecosystems.

1.6. Outline of the Thesis

This thesis addresses the overarching research question of how live streaming strategies (relational bonds and IT affordances strategies) and organizational capabilities jointly shape B2B performance and innovation outcomes in MCN-led B2B live streaming commerce. The thesis comprises three interconnected empirical papers (Paper 1, Paper 2, and Paper 3), detailed in Chapters 2, 3, and 4, respectively. Each paper systematically advances our understanding of the strategic mechanisms through which MCNs leverage relational bonds, IT affordances, and organizational capabilities in complex B2B ecosystems.

Chapter 2 (Paper 1) presents the first empirical investigation, examining how MCNs deploy relational bonds strategy—comprising financial, social, and structural bonds—to enhance B2B strategic and financial performance. Using survey data from 211 MCNs operating in China's B2B live streaming sector, the study explores the moderating effects of organizational learning capabilities (exploratory versus exploitative learning) on relational bonds strategy effectiveness. The findings provide foundational evidence that relational bonds serve as crucial strategic resources, moderated by internal learning processes, significantly influencing MCNs' performance outcomes. This paper (Paper 1) was presented at the Academy of International Business Southeast Asia 2023 Chapter Conference in Bangkok, Thailand, and has been published in the Journal of Business & Industrial Marketing (JBIM), an A-rated journal on the ABDC list.

Chapter 3 (Paper 2) presents the second empirical investigation, examining how MCNs' enactment of VMG IT affordances affects B2B channel and economic performance. Drawing on survey data from 229 MCN firms operating in China's B2B live streaming sector, this study investigates how organizational learning (exploratory and exploitative) and business networking capabilities moderate the IT affordance-performance relationship. The empirical findings provide nuanced insights into how MCNs configure internal and external capabilities to convert technological affordances into measurable performance gains. This paper (Paper 2) was accepted for presentation at the Academy of International Business Southeast Asia 2024 Chapter Conference in Guangzhou, China, and has been published in Industrial Marketing Management (IMM), an A* journal on the ABDC list.

Chapter 4 (Paper 3) presents the third empirical study, shifting the focus to innovation outcomes and exploring the impact of TTS IT affordances on organizational innovation. Using the same dataset of 229 MCNs, this paper

examines how adaptive capabilities, conceptualised through vigilant market sensing, agile experimentation, and open marketing capability, moderate the relationship between TTS IT affordances and innovation outcomes. The results confirm the critical enabling role of adaptive capabilities in translating real-time digital interactions into product, process, and administrative innovations. This paper has been submitted to JBIM and is currently under review.

Chapter 5 concludes the thesis by summarising the major theoretical and practical contributions, discussing managerial implications for MCNs and other B2B digital organizations in digital commerce, acknowledging research limitations, and offering directions for future research.

1.7. Thesis Structure

This introductory chapter (Chapter 1) has established the research motivation, articulated the core research questions, clarified theoretical foundations, and outlined the thesis structure and contributions. The thesis is structured systematically into five chapters, each contributing distinct theoretical and managerial insights:

Chapter 1 – Introduction: Presents the research background, defines the problem statement, clarifies theoretical foundations, research objectives, and thesis contributions.

Chapter 2 – Paper 1 (Empirical Study I): Investigates relational bonds strategy's impact on MCNs' strategic and financial performance, moderated by organizational learning capabilities (exploratory and exploitative learning).

Chapter 3 – Paper 2 (Empirical Study II): Explores VMG IT affordances' effects on MCNs' channel and economic performance, considering organizational learning and business networking capabilities as moderators.

Chapter 4 – Paper 3 (Empirical Study III): Examines TTS IT affordances' impact on organizational innovation outcomes, moderated by adaptive capabilities, including vigilant market sensing, agile experimentation, and open marketing.

Chapter 5 – Conclusion: Summarises the major findings, theoretical and managerial contributions, acknowledges the study limitations, and offers directions for future research.

Chapter 2: Contribution - Doctorate with Publications

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GRADUATE RESEARCH SCHOOL

STATEMENT OF CONTRIBUTION DOCTORATE WITH PUBLICATIONS/MANUSCRIPTS

We, the student and the student's main supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the student's contribution as indicated below in the Statement of Originality.

Student name:	Yiming Yang
Name and title of main supervisor:	Henry Chung, Professor in Marketing
In which chapter is the manuscript/published work?	Chapter 2 is published

Describe the contribution that the student and members of the supervisory team have made to the manuscript/published work:[1]

The student made the primary contribution to the manuscript/published work, including the literature review, data collection, data analysis, and preparation of the manuscript draft. Members of the supervisory team provided academic guidance, critical feedback on the research design and interpretation of results, and editorial comments during the development of the manuscript.

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  Yang, Y., Chung, H. F., & Elms, J. (2025). Relational bonds strategy, organizational learning and B2B performance: the case of multi-channel network. Journal of Business & Industrial Marketing, 40(13), 212-236.

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Chapter 2

Relational Bonds Strategy, Organizational learning and B2B Performance: The Case of Multi-Channel Network

Abstract

Despite growing interest in B2B live streaming, the current literature remains inconclusive about how firms in digital B2B settings can cultivate long-term performance advantages, particularly through the strategic role of Multi-Channel Network (MCN) organizations. Drawing upon the Resource-Based View (RBV) and Organizational Learning (OL) theory, this chapter investigates how relational bonds strategy influences B2B strategic and financial performance in the MCN sector, with a focus on the distinct contingent roles of organizational learning (exploratory and exploitative learning). Using survey data from 211 Chinese MCNs engaged in B2B live streaming commerce, this study employs hierarchical regression analysis to test the proposed relationships. The findings reveal that relational bonds strategy significantly enhances both strategic and financial performance. Moreover, exploratory learning strengthens this positive relationship, while exploitative learning negatively moderates the performance effects of relational bonds. These results underscore the differentiated roles of organizational learning capabilities and provide nuanced insights into when and how relational bonds strategy contributes to MCNs' B2B performance. This chapter extends RBV theory by empirically validating relational bonds as strategic resources in digital B2B settings and enriches OL theory by clarifying the contrasting effects of exploratory and exploitative learning. This study provides managerial guidance for digital B2B managers seeking to align strategic efforts with appropriate organizational learning capabilities to drive superior B2B performance outcomes.

Keywords: Live streaming commerce, Relational bonds strategy, B2B strategic and financial performance, Resource-based view theory, Organizational learning theory

2.1. Introduction

The advent of live streaming commerce has led to the emergence of a new marketing model for online business activities and transactions. This new development has created huge opportunities for business-to-business (B2B) e-commerce (Liao et al., 2023; Liu et al., 2023a; Xu et al., 2020). Among recent research development on B2B e-commerce, Xue and Liu (2022) among others (e.g., Wang et al., 2022) investigate the ecosystem of B2B live streaming commerce. These studies report three components of the ecosystem; upstream suppliers (e.g., brand owners, vendors, and factories), midstream organizations, and downstream customers (e.g., B2B customers) (iiMedia, 2022; Wang et al., 2022; Xue & Liu, 2022). Within this ecosystem, Multi-Channel Network (MCN) organizations are suggested to play a crucial role as the midstream link in the B2B live streaming industry (Li, 2021; Si, 2021). Specifically, MCNs are defined as organizations that engage in collaborative endeavors with content creators such as video bloggers and live streamers, with the objective of facilitating the management and promotion of their content across a multitude of social media platforms (Mao et al., 2022; Shi et al., 2020). In this situation, MCNs act as intermediaries in facilitating the promotion of products and sales transactions between upstream suppliers (e.g., manufacturers) and B2B customers (e.g., wholesalers, retailers, and reselling agents) through live streaming (Wang et al., 2022). For instance, Alibaba's B2B platform 1688.com conducts B2B live streaming operations by marketing industrial products, bulk-order merchandise, and manufacturing solutions directly to wholesalers and retailers (Liao et al., 2023, Huakui, 2020). These B2B live streaming platforms collaborate with MCNs to strategically manage and enhance relationships between upstream suppliers and downstream business customers by facilitating real-time interactions, negotiations, and transactions (Mao et al., 2022; Zhang et al., 2024). Another example is Yaowant Network MCN, which is a prominent Chinese MCN that organizes B2B live streaming operations for manufacturing customers in the apparel and electronics industrial sectors (QCC, 2025). Yaowant Network MCN has collaborated with manufacturing brands, such as Proya Cosmetics, to conduct their B2B live streaming campaigns in order to attract B2B customers (Hupun, 2025; Sohu, 2025). In such MCNs, professional B2B live streamers introduce product details and demonstrate product functionality, as well as respond to technical queries from business buyers and negotiate customized bulk orders with B2B customers. Such strategic live streaming operations have strengthened business relationships and significantly improved sales performance (Hupun, 2025; TOPKLOUT, 2024).

Therefore, the emergence of the B2B e-commerce industry has led to an increase in the size of China's B2B live streaming market, which is projected to reach CNY1,263 billion by 2025 (iiMedia, 2023). This growth is indicative of a rapidly evolving market, with research data indicating that 97% of downstream customers are willing to utilize wholesale e-commerce to purchase goods (iiMedia, 2023). The strategic utilization of B2B live streaming by MCNs offers numerous advantages over traditional procurement methods, including real-time negotiation capabilities, immediate technical support, enhanced transparency, reduced transaction uncertainty, and accelerated purchasing decision-making (Mao et al., 2022; Zhang et al., 2024). Consequently, numerous upstream suppliers and downstream business buyers increasingly adopt live streaming as a complementary method to conventional organizational purchasing practices, thereby reshaping traditional organizational buying behaviors. Nevertheless, despite the growing interest in this digital ecosystem (e.g., Liao et al., 2023; Martín-Peña et al., 2024), there remains a significant gap in understanding the role of MCNs in the B2B context, especially in terms of how their strategic relational operations can enhance their performance outcomes.

Among theories presented in the extant literature, resource-based view (RBV) theory provides a sound theoretical foundation for the investigation of MCNs. According to RBV, organizations should evaluate their resources, including tangible and intangible assets, skills, knowledge, and capabilities when conducting their B2B operations (Anand & Delios, 2002; Barney, 1991). RBV theory describes strategies as a critical element that utilizes non-substitutable, rare, inimitable, and valuable resources of organizations when establishing their sustainable competitive advantage in B2B operations (Anand & Delios, 2002; Barney, 1991; Hart, 1995). Relational bonds strategy fits soundly within the RBV theoretical framework, as it involves optimizing organizational resources, such as financial discounts (e.g., financial bond), social interactivity skills (e.g., social bond), and professional talent management (e.g., structural bond) (Moderno et al., 2024). Although relational bonds strategy has been extensively studied in business-to-consumer (B2C) contexts and has been shown to enhance consumer trust and engagement (e.g., Chen & Lin, 2018; Hu & Chaudhry, 2020; Liu et al., 2022), its application in business-to-business (B2B) environments, particularly within MCNs, remains underexplored. In this study, viewed through the lens of RBV, relational bonds strategy is conceptualized as strategic resources that MCNs use to strengthen their relationships with B2B customers (Anand & Delios, 2002; Moderno et al., 2024). These resources allow MCNs to foster trust, engagement, and long-term cooperation, as relational bonds in B2B e-commerce are essential for customer retention, sales growth, and market competitiveness (Alagarsamy

et al., 2021; Elia et al., 2021; Moderno et al., 2024). In addition, while previous research has primarily focused on the role of MCNs as intermediaries for upstream principals (e.g., Shi et al., 2020; Wang & Wang, 2021), this study shifts the focus to the critical role of MCNs' relationships with their B2B customers. By emphasizing the MCN-customer relationship, this study aims to provide a deeper understanding of how the management of relational bond resources with customers can lead to sustainable competitive advantages and drive performance success in the B2B live streaming sector.

Furthermore, existing research highlights that organizational learning (OL) plays a pivotal role in shaping a firm's resource-based advantage and enhancing organizational effectiveness (Lin, 2008; Smith et al., 1996). In particular integrating OL theory with RBV theory offers a valuable framework for deepening our understanding of how firms leverage both internal and external resources to sustain a competitive advantage (Greve, 2021; Sirmon et al., 2007; Smith et al., 1996). In the context of B2B e-commerce, as technological advancements and shifting market demands create a dynamic environment, organizational learning is critical for maintaining agility and driving innovation (Claycomb et al., 2005; Grewal et al., 2001). Empirical studies consistently emphasize that OL capabilities are vital for the effective execution of e-commerce strategies, enabling firms to navigate the complexities of the digital marketplace (Lin, 2008; Lin & Lee, 2005). For example, research by Claycomb et al. (2005) and Dhir and Dhir (2018) suggest the importance of a strong organizational learning capability in sustaining a competitive edge, directly contributing to improved performance outcomes in B2B e-commerce operations. Moreover, resource-based initiatives, such as the relational bonds strategy, can be enhanced through organizational learning. By continuously adapting and realigning their strategies to meet evolving customer needs, organizations can leverage their financial, social, and structural resources more effectively (Do et al., 2022). This strategic alignment not only strengthens relationships with business customers but also fosters trust and engagement, both of which are essential for long-term success in the B2B e-commerce context (Do et al., 2022; Liu et al., 2022).

Despite this potential, the integration of OL with RBV has received limited attention in the context of the B2B live streaming sector and MCN industry (Greve, 2021; Men et al., 2024). While both theories are individually recognized for their contributions to understanding competitive advantage and strategic resources, little empirical research has explored how these theories can be integrated to enhance MCNs' relational bonds

strategies and their B2B performance (e.g., Sima et al., 2024; Sirmon et al., 2007). This study aims to fill this gap by examining how MCNs can utilize their internal resources and learning capabilities to enhance relational bonds strategy and improve B2B performance. Further, building on March's (1991) distinction between exploratory learning (e.g., acquiring new knowledge) and exploitative learning (e.g., refining existing knowledge), this study investigates the contingent roles of these two forms of organizational learning in shaping MCNs' relational bonds strategy and their B2B performance (Chung et al., 2015; Chung & Ho, 2021; March, 1991).

This research uses the experience of 211 Chinese MCN organizations utilizing B2B live streaming to explore its research conceptualization. This study offers some key contributions to the existing literature in RBV theory, OL theory, B2B performance, and MCNs. First, this study broadens the research application of RBV theory by integrating it with the relational bonds strategy in the context of MCNs (Barney, 1991). The outcomes of this research can provide a novel insight into when and how relational resources of MCNs can enhance their B2B performance (Hu & Chaudhry, 2020; Lee & Chen, 2021; Wang, 2020). As a result, this study can provide guidance on whether RBV can be used as an explanatory theory in the relational bonds strategy-MCN B2B performance framework. Second, this study contributes to extant OL theory research by revealing the role of organizational learning (exploratory and exploitative learning) in the relational bonds strategy and B2B performance relationship framework (Chung & Ho, 2021; March, 1991). As outlined in Figure 2.1, exploratory learning is postulated to have a positive effect, and exploitative learning is formulated to have a negative effect, in the relational bonds strategy-MCN B2B performance framework. Based on the outcomes of this study, B2B researchers can determine whether OL theory can be employed as a conceptual theory in the relational bonds strategy, organizational learning and MCN B2B performance investigation. Utilizing this study's outcomes, B2B researchers can also determine whether both forms of organizational learning should be treated as separate contingent factors, or whether they can be grouped as a common construct, when exploring a framework consisting of relational bonds strategy, organizational learning and MCN B2B performance (Chung et al., 2015; March, 1991). The outcomes of this study may also significantly expand recent theoretical deployment of OL theory from its usage in managerial ties, differentiation/low-cost competitive strategies in the B2B context (Chung & Ho, 2020; Chung et al., 2015; March, 1991; Men et al., 2024). Lastly, the outcomes of this study may expand the research scope of relational bonds strategy from the context of B2C to B2B (Chang et al., 2021; Hu

& Chaudhry, 2020; Nath & Mukherjee, 2012). This expansion offers critical, newer insights into the deployment of relational bonds in B2B businesses, especially within the operational framework of MCNs. Based on the outcomes of this study, researchers and business executives can now determine whether they can utilize relational bonds strategy in their B2B, as well as B2C, operations.

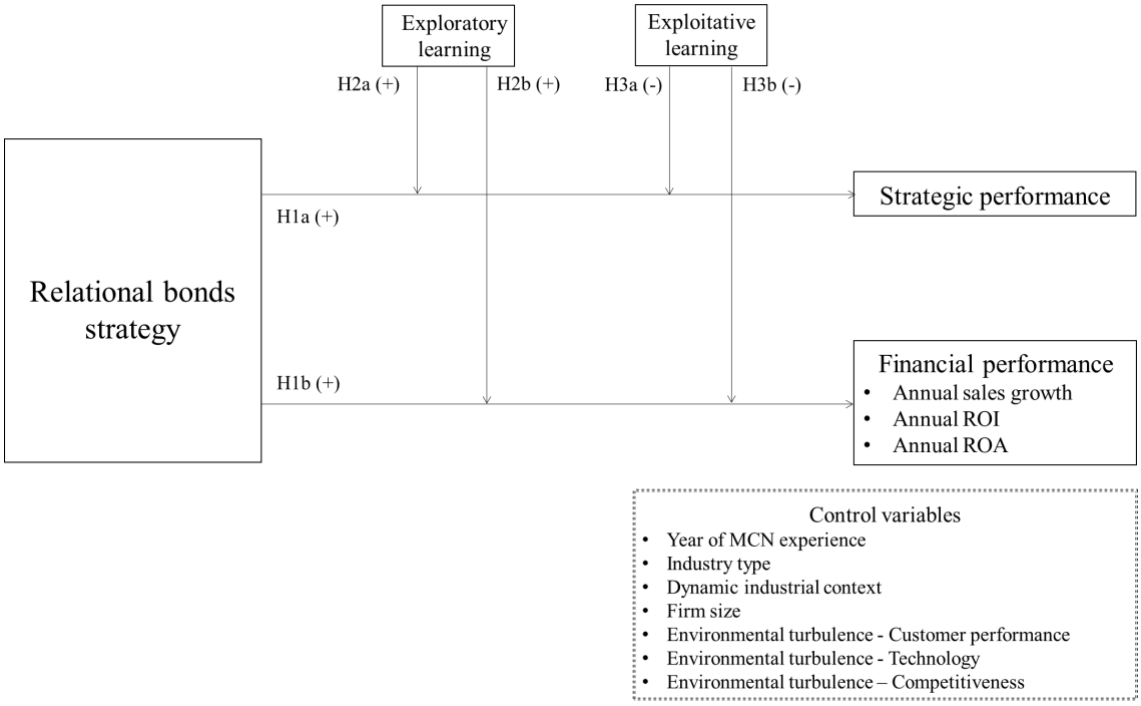

FIGURE 2.1: CONCEPTUAL FRAMEWORK

2.2. Theoretical background

2.2.1. Resource-based view

The Resource-Based View (RBV) theory, developed by Barney (1991) and further refined by scholars such as Hart (1995) and Sirmon et al. (2007), posits that an organization's resources and capabilities are fundamental to achieving and maintaining a sustainable competitive advantage. According to RBV, organizations can create strategic advantages by leveraging resources that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1991). These resources may include both tangible assets, such as capital and technology, and intangible assets, such as brand reputation, intellectual property, and organizational culture (Barney, 1991). RBV emphasizes that resource management is a key determinant of business success, particularly in industries

characterized by dynamic environments and high competition, such as the live streaming industry (Hart, 1995; Liu et al., 2023a). In the context of B2B live streaming commerce, the application of RBV suggests that MCNs can leverage their organizational resources to enhance their performance in the B2B space (Cuthbertson & Furseth, 2022; Elia et al., 2021). This includes the optimization of relational resources, such as financial, social, and structural bonds with their partners, principals, and customers (Moderno et al., 2024). Specifically, these resources enable MCNs to strengthen their strategic position in the marketplace and improve their competitive advantage by fostering strong relationships with B2B customers, thereby enhancing their business performance. Therefore, RBV provides a comprehensive framework for understanding how MCNs can utilize resources, particularly relational bonds resources, to gain a competitive advantage in B2B live streaming commerce. By continuously optimizing their resource base, MCNs can enhance their strategic position, leading to improved business performance and sustained success in the industry (Greve, 2021; Liao et al., 2023). As such, this theoretical lens is critical for understanding the internal dynamics of MCNs and how they can capitalize on their resources to thrive in the competitive live streaming ecosystem.

2.2.2. Organizational learning theory

Organizational learning (OL) theory is a vital element in developing and maintaining competitive advantage, especially in dynamic industries such as the live streaming industry (Men et al., 2024). March (1991) divides organizational learning into exploratory learning and exploitative learning. Exploratory learning refers to the acquisition and creation of new knowledge, including the implications of exploring spirit, dynamism, adventure, experiment, flexibility, discovery, and self-innovation. This organizational learning capability is regarded as experimentation, risk-taking and continuous exploration of new ideas. These may create long-term strategic advantages (Chung et al., 2015; Dhir & Dhir, 2018). Existing e-commerce research has shown the effect of exploratory learning on organizational implementation and adaption ability (Lin, 2008; Lin & Lee, 2005), which can enhance strategic performance and financial performance (Cavusgil & Zou, 1994; Knight & Cavusgil, 2004). In contrast, exploitative learning is essential to improving existing knowledge, including refining affinage, selection, productivity, potency, denouement, and implementation (March, 1991; Su et al., 2011). Exploitative learning can enhance immediate efficiency and productivity. However, this organizational learning capability constrains the ability of the organization to adapt to emerging changes and opportunities, especially in

the dynamic live streaming industry (Chu et al., 2011; Chung et al., 2015; Hughes et al., 2007). This indicates that an excessive focus on exploitative learning may have a negative impact on firm performance within the framework of this study (Claycomb et al., 2005; Dhir & Dhir, 2018). Despite the extensively studied roles of both types of learning, the contingent effect of these two organizational learning capabilities has not yet been examined in the relationship between relational bonds strategy and B2B performance (Hu & Chaudhry, 2020; Lin & Lee, 2005). This study aims to fill this gap by separately investigating the moderating effect of the two organizational learning types. By doing so, this research provides novel insights into how MCNs can leverage their organizational learning capabilities to achieve both strategic goals and financial outcomes (Cavusgil & Zou, 1994; March, 1991).

2.2.3. Theoretical framework of RBV and OL

Recent research has expanded the RBV framework by incorporating OL theory, emphasizing how continuous learning can complement resource management strategies. By combining RBV and OL theory, this research conceptualizes how these frameworks complement each other: RBV emphasizes the strategic use of resources, while OL provides a framework for adapting and evolving those resources (see Figure 2.1) (Anand & Delios, 2002; Barney, 1991; Hart, 1995). For instance, Sirmon et al. (2007) suggest that an organization's ability to adapt and leverage its resources through ongoing learning strengthens its capacity to maintain a competitive advantage. Therefore, the integration of OL with RBV provides a more dynamic perspective on how firms can evolve their resource base in response to changing market conditions and environmental shifts (Greve, 2021; Liao et al., 2023). Together, RBV and OL offer a robust framework for understanding how MCNs can build and sustain competitive advantage in the B2B live streaming industry by effectively managing and utilizing their resources. By cultivating strong relational bonds with customers, MCNs can strengthen their market position. The next phase of this research explores how MCNs can integrate organizational learning with RBV to refine their relational bonds strategy, leading to improvements in both financial performance and strategic outcomes.

2.2.4. Relational bonds strategy

Berry (1995) and Berry and Parasuraman (2004) develop the relational bonds concept, suggesting that companies can cultivate loyalty, remain cost-efficient, improve marketing competitiveness, and obtain financial

benefits through enduring relationships with customers. To theoretically underpin our conceptualization of relational bonds strategy in the B2B context, we draw on the Relational View proposed by Dyer and Singh (1998). This perspective emphasizes that sustainable competitive advantages can be derived from inter-organizational relationships, particularly through relation-specific assets, complementary resources and capabilities, knowledge-sharing routines, and effective governance structures. In alignment with Dyer and Singh's relational view, we posit that MCNs strategically invest in relation-specific assets (e.g., dedicated B2B live streaming studios, professionally trained B2B-oriented streamers), facilitate knowledge-sharing routines (e.g., real-time product demonstrations and technical consultations), and coordinate complementary resources across supply chain partners (e.g., linking upstream suppliers and downstream B2B customers through interactive live-streaming platforms) (iiMedia, 2023; Liao et al., 2023). Thus, our study extends the relational framework of Dyer and Singh (1998) by explicitly integrating the innovative context of digital B2B live streaming as a mechanism for effectively governing and enhancing strategic relational bonds. Following previous research, relational bonds can be divided into financial bonds, social bonds, and structural bonds (Gu & Wang, 2016). In the live streaming business, relational bonds strategy was proved to positively influence customer engagement (Hu & Chaudhry, 2020). Good customer engagement leads to a superior firm performance (Lages et al., 2008). Following this research guidance, this research aims to provide evidence on the effect of relational bonds from the MCN point of view. The three relational bonds components will also be combined as a construct in the study.

From the perspective of RBV theory, relational bonds are valuable, rare, inimitable, and non-substitutable resources that organizations can use to gain competitive advantage. In this regard, relational bonds strategy is consistent with the RBV framework by emphasizing the strategic value of resources such as financial incentives (financial bond), social interaction skills (social bond) and organizational talent management (structural bond). By implementing relational bonds strategy, MCNs gain competitive advantage by effectively using their resources and capabilities to execute strategic actions that are difficult to replicate (Barney, 1991; Grant, 1996). Guided by the RBV theoretical foundation, this study is among the earlier attempts to investigate the effect of relational bonds strategy on MCN B2B performance. The findings of this research can provide a new understanding on how MCNs can use their relational bonds strategy to achieve B2B success.

2.2.4.1. Financial bonds

Financial bonds refer to special price concessions or other financial incentives offered to strengthen customer relationships, as the first level of relational bonds (Berry, 1995). In live streaming campaigns, this acts as impulse purchasing stimuli, including discount bonuses, promotion activities, and virtual gifts (Leeraphong & Sukrat, 2018). During the epidemic period, Chinese live streaming customers pursued cheap products and were cautious of financial bonds (Si, 2021). According to the incentive and RBV theory, pricing incentive works to motivate the audience to buy (Lin et al., 2009). Moreover, live streamers are given authority to have the right to negotiate a lower price for customers in real-time. It can positively influence customer decision-making by reducing customer uncertainty (Chen et al., 2017; Mao et al., 2022). Consequently, establishing financial bonds can create a win-win situation where customers get a lower price, and companies can increase their business performance.

2.2.4.2. Social bonds

Social bonds refer to service dimensions used to establish relationships, including regularly communicating with customers, friendship and identification, responsiveness, and support (Berry, 1995). In live streaming marketing campaigns, streamers utilize their characteristics and live streaming style to interact with customers (Hu & Chaudhry, 2020). More specifically, Cai et al. (2021) discover that the friendliness of streamers and social interaction provide emotional support for the customer to engage in live streaming activities. Dang-Van et al. (2023) also argue that the top-ranking live streaming influencers maintain high-frequency interactions with their followers, which can be regarded as social bonds, to cultivate emotional connection. These social bonds contribute to customers' positive emotions, with a high customer retention rate and customer satisfaction (Hu & Chaudhry, 2020). Strong customer retention and satisfaction leads to superior firm performance (Ho & Chung, 2020; Lages et al., 2008).

2.2.4.3. Structural bonds

Structural bonds refer to valuable services that are not easy to obtain and for which it is difficult to find alternatives (Berry, 1995). The main purpose of structural bonds is to enhance customer relationships by providing structural solutions to important customer problems and reduce the cost/time of customer searches

and decision-making (Berry & Parasuraman, 2004). Structural bonds are formed by providing a convenient shopping environment, comprehensive information, and professional knowledge to the firm's customers. They are technology relationship-building skills (Gu & Wang, 2016; Hu & Chaudhry, 2020). Leeraphong and Sukrat (2018) and Ghaderzadeh et al. (2018) find that social media technology, digital content, and other assistance can advance live streaming technology (e.g., bullet-screen, cross-platform link, and 3D holographic display) and drive consumer shopping behavior (Trainor et al., 2014; Xu et al., 2020). In sum, structural bonds can create a sustained competitive advantage for firms because of a high level of inimitability (Berry, 1995).

2.2.5 Business performance

Organizational and marketing research has strongly recognized the importance of financial and non-financial enterprise performance (Felix et al., 2017). Growth in the conversion rate (financial) and user experience (non-financial) has greatly improved the business performance of MCN businesses and has benefited all parties in the live streaming chain (Liu et al., 2022). This research examines two forms of B2B performance (strategic performance and financial performance) of MCNs in its research conceptualization. Specifically, strategic performance refers to the effects from a company usually launching with several strategic goals, such as market share expansion, competitive reaction, organizational position in the market, or creating product/brand awareness (Cavusgil & Zou, 1994; Chung & Kuo, 2018). Measuring strategic performance can transform and communicate a firm's vision and mission, as well as align them with the firm's operations and functions (Radithya & Tin, 2012). In the existing e-commerce research, strategic performance has been stressed (Chen et al., 2022; Liu et al., 2023c; Mao et al., 2022; Pu et al, 2021). Moreover, financial performance is related to the efficiency of a company's business operations in terms of cost expenditure and profitability (Chung & Ho, 2021). This performance includes key measures such as market share, profitability, revenue growth, return on investment (ROI), and return on assets (ROA) (Galankashi & Rafiei, 2022). By assessing financial performance, a company can evaluate its overall financial health, which is critical for long-term sustainability (Chung & Ho, 2021). Taken together, this study aims to provide a comprehensive understanding of the B2B performance of MCNs by examining both strategic and financial performance. This measures both the achievement of long-term strategic goals and the efficiency of financial operations for B2B success.

2.3. Research Hypotheses

MCNs are organizations that cooperate with content creators, such as video bloggers, live streamers, and other influencers and key opinion leaders (KOLs) to optimize their contents across various social media and live streaming platforms (Mao et al., 2022; Shi et al., 2020). MCNs help collaborators conduct online business, such as producing, programming, funding, partnering management, audience development, digital rights, intellectual property, and monetization (Statista, 2023). In B2B operations, as outlined above, MCNs act as intermediaries between upstream businesses (i.e., principals) and B2B buyers (i.e., customers) (Lobato, 2016; Xue & Liu, 2022). In such, this study postulates a B2B marketing model in the live streaming industry, namely Principals (i.e., upstream organizations) – MCNs (i.e., midstream) – MCNs customers (e.g., downstream customers: wholesalers, retailers, and reselling agents) (Chen et al., 2022; He et al., 2022; Pu et al., 2021). In the Principals – MCNs relationship, MCNs collect a fixed link fee and a commission proportional to the sales volume of live streaming sales from the principals (Li et al., 2022; Wang et al., 2023). In MCNs-B2B customer models, MCNs connect and interact with their customers (e.g., intermediaries, retailers, and reselling agents) to facilitate live streaming item purchases (e.g., video) and other B2B business activities (He et al., 2022; Wang, 2020; Wang et al., 2023).

Through these interactions, MCNs not only help principals generate profits but also establish strong relationships with B2B customers by conducting effective and efficient B2B live streaming campaigns (Li, 2021; Mao et al., 2022). This process directly influences the business performance of MCNs, including non-financial performance and financial performance metrics. Researchers have viewed strategic competitiveness as an aspect of non-financial performance (e.g., gaining footholds, responding to competitive challenges) (Felix et al., 2017; Kim & Kim, 2021) and have classified financial performance as the financial outcomes of business operations (e.g., sales growth, ROI, ROA) (Cavusgil & Zou, 1994; Chung & Kuo, 2018). This research theorizes the relationship between relational bonds strategy and business performance, including strategic performance and financial performance. This study postulates the contingent role of exploratory learning and exploitative learning. To facilitate the understanding of hypothesis postulation, our postulated conceptual framework is displayed in Figure 1.

2.3.1. Relational bonds strategy and B2B strategic performance

Extant literature notes that most audiences watch live streaming for entertainment, rather than purchasing, purposes (Chen & Lin, 2018). Therefore, a non-financial performance indicator such as strategic performance emerges as a sound result indicator for live streaming.

Relational bonds strategy has interactive features, and these can enhance firms' awareness and improve the competitiveness of MCN organizations (Hu & Chaudhry, 2020). Extant research provides support for this postulation (e.g., Cai et al., 2021). For example, social bonds can improve the awareness of live streaming activities of MCNs by providing pre-heating strategy tagging discounts and other social interactions (Si, 2021). These interactive customers' experiences can help MCNs to generate firm attention (Hu & Chaudhry, 2020). A strong awareness can lead to a higher strategic performance (Cavusgil & Zou, 1994). Moreover, strong social bonds can offer emotional support from customers in the e-commerce environment (Dong & Wang, 2018). Research indicates that social bonds with strong emotional support would lead to customer loyalty for the MCN organization or live streamer (TOPKLOUT, 2024). These advantages would lead to MCNs' market competitiveness (Lee et al., 2018; Radithya &Tin, 2012). Therefore, MCNs can improve their strategic performance goals, such as awareness and competitive advantage, based on established social bonds.

In addition, customers can be attracted by relational bonds to engage with the live streaming activities (Chen & Lin, 2018; Hu & Chaudhry, 2020; Leeraphong & Sukrat, 2018). Extant research supposes that conducting relational bonds strategy can help MCNs expand their market scope through higher customer engagement (Hu & Chaudhry, 2020). MCNs take on the responsibility of professional talent management for live streamers (Si, 2021). Professional communication skills can enhance the efficiency of structural bonds and influence the engagement intention of customers (Hu & Chaudhry, 2020). By increasing customer followers, MCNs can receive greater cooperation from firms with higher traffic and market share (Lee et al., 2018; Radithya & Tin, 2012). These advantages would help MCNs to achieve strategic performance, such as extending their business to other industries (e.g., expanding live streaming business from cosmetics to food industry) (Si, 2021). Based on the above discussion, the following is proposed.

H1a: Relational bonds strategy has a positive effect on the strategic performance of MCNs.

2.3.2. Relational bonds strategy and B2B financial performance

Relational bonds strategy has been proven to affect customer purchasing intention and behavior (Gu & Wang, 2016; Hu & Chaudhry, 2020). Within the online business operation, a high conversion rate may imply high financial benefits for MCN (Lee & Chen, 2021). This study postulates that the relationship bonds strategy has a positive impact on the financial performance of MCNs.

Relational bonds strategy can stimulate consumption to promote sales growth (Hu & Chaudhry, 2020). Financial bonds, such as discount bonuses and promotion activities, are widely confirmed in their role as incentives for purchase (Leeraphong & Sukrat, 2018; Lin et al., 2009; Wang, 2020). Financial bonds influence purchasing intention and decision-making (Chen et al., 2017; Mao et al., 2022). Therefore, financial bonds can increase sales volume by directly stimulating purchasing (Chen et al., 2017; Leeraphong & Sukrat, 2018; Lin et al., 2009). Moreover, a strong social bond between live streamers and customers can encourage customers to complete the order (Trainor et al., 2014; Wang, 2020). Social bonds are important for customers' positive emotions, with a high customer retention rate and increased repeat sales (Hu & Chaudhry, 2020). Social bonds of customer satisfaction, such as satisfactory after-sales service and delivery speed, can also generate repeat purchases (Chen & Chiu, 2009). Consequently, increased consumption may lead to sales growth, thereby improving the financial performance of MCNs (Leeraphong & Sukrat, 2018).

Relational bonds strategy is also powerful in improving the profitability, and promoting the financial performance, of MCNs (Wang, 2020). This can be seen in two aspects. First, customers are willing to pay a slightly higher price for the live streamers they like and interact with frequently (TOPKLOUT, 2024; Wang, 2020). Such social bonds support the premium pricing strategy of MCNs because of an effective emotional connection (Hu & Chaudhry, 2020; Si, 2021; Wang, 2020). Second, structural bonds can drive customer shopping behavior and intention (Trainor et al., 2014; Xu et al., 2020), thus mitigating the impact of pricing (Parise et al., 2016). Hence, MCNs can gain greater profits by increasing the perceived value, enjoyment, and usefulness of their product to customers (Lee et al., 2018).

H1b: Relational bonds strategy has a positive effect on the financial performance of MCNs.

2.3.3. Relational bonds strategy, organizational learning and B2B performance

This study builds on OL theory and the RBV to offer insights into the disparate impacts of organizational learning on relational bonds strategy and B2B performance, by examining the moderating effect of exploratory learning and exploitative learning (Barney, 1991; March, 1991). Specifically, RBV explains that MCNs can achieve a competitive advantage by leveraging valuable relational bonds resources, such as financial, social, and structural bonds (Elia et al., 2021; Hu & Chaudhry, 2020). These resources are central to building strong relationships with B2B customers, with the aim of enhancing performance. OL theory complements this by illustrating how MCNs adapt and refine their relational bonds strategies over time through exploratory learning (focused on acquiring new knowledge) and exploitative learning (focused on optimizing existing knowledge) (Claycomb et al., 2005; Dhir & Dhir, 2018). By combining RBV with OL theory, this study highlights how the strategic management of relational bonds resources through learning processes can enhance MCNs' B2B performance (Anand & Delios, 2002).

2.3.3.1. Relational bonds strategy, exploratory learning and B2B strategic performance

Exploratory learning is associated with organizational creativity, improvement of heterogeneous knowledge and innovative ideas (Valaei et al., 2017; Yang et al., 2020). According to capability monitoring literature, the constructive effect of exploratory learning on a firm's strategic value and profit benefits is supported (e.g., Chung et al., 2015; Nijssen et al., 2012).

Extant research argues that exploratory learning works because of innovative competitiveness (Valaei et al., 2017). The breakthroughs in technological approaches (i.e., structural bonds) can exacerbate the operation of MCNs (Si, 2021). The growth of mobile technology and technology movements has set the stage for the rapid spread of MCNs and the opportunity to establish more structural bonds (Shi et al., 2020). Structural bonds, such as the technological advance of AI (Artificial Intelligence), VR (Virtual Reality), AR (Augmented Reality), and MR (Mixed Reality) lead to new competitive initiatives in the MCN industry (Si, 2021). Based on structural bonds acquired through exploratory learning, the strategic performance of MCNs can benefit from this competitive advantage (Cavusgil & Zou, 1994; Ghaderzadeh et al., 2018; Hu & Chaudhry, 2020). Moreover, technological innovations can support new financial bonds, such as virtual gifts and lucky draws (Leeraphong & Sukrat, 2018; Si, 2021; Wang, 2020). Price incentive advantages can increase the competitiveness of MCNs (Chen et al., 2017; Mao et al., 2022). Therefore, exploratory learning enables MCNs to better develop their

relational bonds strategy, thereby increasing their competitiveness and strategic performance (Cavusgil & Zou, 1994).

Furthermore, Chung et al. (2015) add that the market intelligence acquisition function via exploratory learning can promote MCNs as a highly cooperative industry in terms of gaining a strong foothold (Cavusgil & Zou, 1994; Si, 2021; TOPKLOUT, 2024). Extant research argues that the interaction between exploratory learning and relational bonds can benefit from the market intelligence acquisition function. MCNs can acquire more stylish market intelligence, such as the fashion cycle and bandwagon technique. This contributes to the structural bonds based on the latest market intelligence (Berry & Parasuraman, 2004). Structural bonds can give a firm a secure foothold in the market because it is highly inimitable (Berry, 1995). Moreover, live streamers can attract customers based on current market information and build social bonds (Hu & Chaudhry, 2020; Si, 2021). Customers tend to use live streaming as a source of knowledge (Xu et al., 2020). By fulfilling these customers' desires, MCNs may have a stronger competitive position in the industry operated in, and this competitiveness can improve strategic performance (Cavusgil & Zou, 1994; Mao et al., 2022; Zennyo 2020). Therefore, it is hypothesized:

H2a: The interaction of relational bonds strategy and exploratory learning has a positive effect on the strategic performance of MCNs.

2.3.3.2. Relational bonds strategy, exploratory learning and B2B financial performance

Exploratory learning ability may help MCNs deal with industrial dynamic contexts (Ghaderzadeh et al., 2018; Yang et al., 2020). The relational bonds strategy can be amplified by exploratory learning based on adaptability to the turbulent environment, leading to improvement in financial performance. MCNs can dynamically predict the behavior of the targeted customers based on exploratory learning capability (Ghaderzadeh et al., 2018). For example, China's major consumer groups are changing from urban to rural, referred to as "sinking geography" (Si, 2021, p.47). Based on the exploratory learning capability of constantly acquiring new knowledge, social bonds can be reconstituted in a timely manner to engage new customers in live streaming activities (Hu & Chaudhry, 2020). Strong customer engagement may contribute to increased purchase intention from the newly established social bonds, enabling sales growth in the MCN industry (Ho & Chung, 2020).

Exploratory learning capability allows more efficient knowledge dissemination (Chung et al., 2015; March 1991). Knowledge dissemination is positively related to the success of online business implementation (Lin, 2008). This study considers the potential impact of this advantage of exploratory learning ability, combined with relational bonds, on the financial performance of MCNs. MCNs, as social bonds, train live streamers on communication skills and interpersonal skills (Hu & Chaudhry, 2020; Shi et al., 2020). Exploratory learning capability can influence the level at which knowledge is imparted and transferred (Chung et al., 2015; Uzzi & Lancaster, 2003). This implies that live streamers may better grasp the method of establishing social bonds based on organizational exploratory learning. Moreover, structural bonds, such as comprehensive information and professional knowledge, may also be strengthened based on efficient knowledge dissemination (Gu & Wang, 2016; Hu & Chaudhry, 2020). Such an exploratory learning process can enhance relational bonds and improve the viewing experience and engagement of customers (Chen & Lin, 2018; Dong & Wang, 2018), thereby promoting the financial performance of MCNs (Ho & Chung, 2020; Hu & Chaudhry, 2020).

H2b: The interaction of relational bonds strategy and exploratory learning has a positive effect on the strategic performance of MCNs.

2.3.3.3. Relational bonds strategy, exploitative learning and B2B strategic performance

March (1991) reveals that exploitative learning is important in perfecting and restructuring existing operational areas and knowledge. Previous research suggests that exploitative learning can have both positive and negative effects in volatile, uncertain, complex, and ambiguous (VUCA) environments. While exploitative learning can enhance creativity and innovation capabilities in small and medium-sized enterprises (Valaei et al., 2016), it may hinder performance when combined with a strong entrepreneurial orientation in young high-tech firms (Hughes et al., 2007; Su et al., 2011). In the high-tech live streaming industry, for example, MCNs must constantly innovate and adapt to rapidly evolving trends and technologies, such as shifts in customer behavior, platform changes, and technological advancements (Shi et al., 2020; Si, 2021). Exploitative learning, focusing solely on improving existing processes, could limit MCNs' ability to capitalize on new opportunities, thereby leading to lower performance outcomes (Hughes et al., 2007). Hence, considering these mixed outcomes, this study postulates the negative impact of exploitative learning capability in the relational bonds strategy and business performance relationship.

Exploitative learning concentrates on existing knowledge (March, 1991). As technology changes rapidly, the MCN industry always has a demand for new knowledge, rather than continuing to walk in old footsteps in existing areas (Shi et al., 2020; Si, 2021; TOPKLOUT, 2024). Exploitative learning capability may prevent MCN organizations from expanding their markets, thus weakening their strategic performance (Cavusgil & Zou, 1994). When MCN organizations overuse exploitative learning, MCNs may be only utilizing the industry in a vertical sense, focusing only on existing social bonds with existing customers (Collls, 1994; Grant, 1996; Shao et al., 2020). For example, an MCN that has established social relationships only with customers in the food industry may struggle to reach out to the fashion industry (Si, 2021; TOPKLOUT, 2024). The result could be that MCNs may lack the expertise to establish relational bonds in new markets, such as the suitable form of financial bonds (Lin et al., 2009; Si, 2021). Some customers may prefer direct discounts, while customers in another market may be attracted by promotion activities (Leeraphong & Sukrat, 2018; Wang, 2020). Hence, the interaction between exploitative learning and relational bonds strategy may hinder growth in the market operated in, thereby reducing the strategic performance of MCNs.

Furthermore, Ali (2021) summarize that exploitative learning is only conducive to short-term survival with lower competitiveness. Relational bonds would be diminished because of the disadvantage in competition (Ali, 2021; Cavusgil & Zou, 1994; Berry, 1995). Thus, the interaction of exploitative learning and relational bonds would negatively influence the strategic performance of MCNs (Cavusgil & Zou, 1994). Moreover, the values generated from exploitative learning can be imitated by other MCN organizations, which would severely affect MCNs' competitive advantage in that market (Ali, 2021; Cavusgil & Zou, 1994; Su et al., 2011). In sum, financial bonds of MCNs may be broken, as competitors may find ways to cut costs with new technology and offer greater discounts to attract customers (Lin et al., 2009). As a result, exploitative learning capability may negatively influence the effect of relational bonds strategy on MCNs' strategic performance (Ali, 2021; Chung et al., 2015; Shi et al., 2020).

H3a: The interaction of relational bonds strategy and exploitative learning has a negative effect on the strategic performance of MCNs.

2.3.3.4. Relational bonds strategy, exploitative learning and B2B financial performance

Exploitative learning capability has been verified as a weakness of innovation and leads to persistently low levels of innovativeness (Atuahene-Gima & Murray, 2007; Hansen et al., 2019; Valaei et al., 2016). The low level of innovation goes against the requirements of structural bonds to some extent (Gu & Wang, 2016; Hu & Chaudhry, 2020). Consequently, research argues that exploitative learning hinders the implementation of the relational bonds strategy and reduces the financial performance of MCNs. For instance, exploitative learning impedes the development of technology in the MCN industry (Ali, 2021). Lacking technology-related skills would hinder the construction of structural bonds (Gu & Wang, 2016). As live streaming technologies are constantly evolving (e.g., bullet-screen with new functions), MCN organizations lacking advanced technology will find it difficult to drive customer shopping intentions and achieve sales growth, leading to a decline in financial returns (Trainor et al., 2014; Xu et al., 2020).

Exploitative learning requires a more stable external context to accurately replicate routines and business models (Ha, 2019; Kor & Mesko, 2013). This learning feature may be incompatible with the turbulent MCN industry (Ha, 2019; Hansen et al., 2019; Kor & Mesko, 2013). Supporting this view, Atuahene-Gima and Murray (2007) claim that exploitative learning is designed to meet the needs of existing customers. It constrains the social bonds to contact only with existing customers. The sales volume of MCNs will be restricted because their firms are unable to expand customer groups (Chung & Ho, 2021; Odalo et al., 2016). Moreover, exploitative learning will make MCNs overly dependent on pre-existing structural bonds (Xu et al., 2020). However, these existing structural bonds are not sufficient to cope with frequent changes in service and technologies (Kim & Huh, 2015). As such, the profitability of MCNs will be damaged because of its reliance on exploitative learning capability (Kim & Huh, 2015; Xu et al., 2020). Taken together, the alignment of exploitative learning capability and relational bonds may negatively affect the financial performance of MCNs (Ali, 2021; Chung et al., 2015).

H3b: The interaction of relational bonds strategy and exploitative learning has a negative effect on the strategic performance of MCNs.

2.4. Method

2.4.1. Sample and Data Collection

This research employs a quantitative survey and focuses on MCNs operating B2B business in China. The choice of a quantitative approach is central to this study as it allows for a systematic and empirical examination of the relationships between relational bonds strategy, organizational learning, and business performance in the context of MCNs conducting B2B live streaming commerce (Bell et al., 2022; Chung et al., 2015). This approach is particularly suitable for answering the research questions because it enables the collection and analysis of numerical data, providing the opportunity to test hypotheses and establish statistical relationships between variables (Bell et al., 2022). Moreover, the quantitative method facilitates handling a large and diverse sample, increasing the study's external validity and objectively (Bell et al., 2022). This method is well-suited for exploring large datasets and capturing the dynamics across a wide range of MCNs, ensuring that the findings are robust and can be applied to a broader context (Chung et al., 2015; Hu & Chaudhry, 2020). By quantifying the role of exploratory and exploitative learning, along with relational bonds strategy, the approach provides a clear, data-driven understanding of the impact of these variables on MCNs' performance in the B2B live streaming sector (e.g., Chung et al., 2015; Galankashi & Rafiei, 2022; Hu & Chaudhry, 2020). This empirical evidence can support strategic operations and contribute to theory development in the B2B live streaming area.

This research carried out a randomized sampling to select MCNs from a comprehensive sampling frame (Bell et al., 2022). The sample frame for this study includes 211 MCN organizations operating within the B2B live streaming business in China. The MCNs were selected based on their active involvement in the B2B live streaming sector, ensuring a representative sample of the industry. A sampling frame list was created from a wide range of reliable sources, including government reports, industry white papers and extensive databases of China's leading live streaming platforms. These sampling frame sources included the State Administration of Radio MCN research report (SVA, 2020), the White paper on the development of China's MCN industry (TOPKLOUT, 2024), the China Industry and Commerce Federation, the Chinese Enterprise Yellow Pages (Chung et al., 2015), and assessable backend databases of Chinese live streaming platforms (i.e., TikTok, Taobao, and KWAI) (Taobao, 2024; TikTok, 2024). These data sources are widely used in extant research and have a reputation for providing up-to-date and accurate information about MCN organizations, and are therefore highly reliable (Mao et al., 2022; TOPKLOUT, 2024). The database includes MCNs from all major regions in China, allowing the study to capture regional variations and industry-wide trends. The selection of MCNs was conducted randomly to ensure that each MCN organization had an equal opportunity of being included in the

study. This approach helped to minimize selection bias and enhance the representativeness of the sample (Bell et al., 2022; Liao et al., 2023). For greater transparency and reliability, Table 2.7 (see Appendix C) details the specific sources used for this survey, including the survey instruments, data collection methods, and sampling criteria. The sources are based on existing industry reports and academic studies that have previously used similar instruments for data collection in related fields (e.g., Liao et al., 2023; Wang et al., 2023). These sources have been carefully selected to ensure that the data is reliable, valid, and relevant to the research objectives. By clearly explaining the sampling process and providing detailed sources, this study aims to strengthen confidence in the data collection process and the overall findings.

Given that there are currently around 4,000 MCNs in China, with the number expected to surpass 6,000 by 2025 (iiMedia, 2022), a sample of 800 MCNs was randomly selected from this population. Respondents were contacted via email and WeChat. Prior to formal empirical study, an English questionnaire was designed according to the guidance of extant literature (Atuahene-Gim & Murray, 2007; Cavusgil & Zou 1994; Chung & Kuo, 2018; Knight & Cavusgil, 2004). As the research was conducted in China, the questionnaire was translated into Chinese. To ensure that the measurement items accurately captured the strategic relational practices of MCNs within a B2B (rather than consumer-oriented) context, a pilot study was conducted involving five senior managers from MCN organizations (Lee & Chen, 2021). In the pilot study cover letter and the questionnaire instructions explicitly asked participants to consider their companies' current B2B operations when reviewing and responding to the measurement items. The managers involved in the pilot study specifically reviewed the measurement items for "relational bonds strategy" and confirmed that these items effectively represented the strategic activities MCNs utilize in live streaming to manage relationships with their downstream B2B customers, including wholesalers, retailers, and reselling agents. The finalized questionnaire, along with a clear instructional cover letter emphasizing again the need to respond based on current B2B operational practices, was sent to two senior executives from each selected MCN company (e.g., CEOs, Managing Directors, General Managers, CFOs, Marketing Managers) (Chung et al., 2021; Podsakoff et al., 2003). The cover letter includes clear instructions to direct two respondents to complete the questionnaire. The first senior executives were asked to complete the independent variables of their companies (i.e., relational bonds strategy, organizational capabilities, profile information). The second senior executives (e.g., CFOs, marketing managers, deputy

managing directors) were asked to complete their companies' dependent variables information (business performance – i.e., sales growth, ROI, ROA, strategic performance).

Furthermore, to ensure our sample accurately captured the intended B2B context, we included a gate question by asking the first respondents to indicate the B2B customers of their MCN organizations when responding to the survey questionnaire. The survey results confirmed that our respondents served B2B customers rather than individual consumers. Our respondents' B2B customers consisted of retailers, wholesalers, reselling agents, distributors, manufacturers, and other business customers (e.g., restaurants). The gate question provides strong assurance that our sample is operating in the B2B context. The B2B customer information supports the validity and reliability of our subsequent analysis and findings concerning MCNs' operations in the B2B sector.

Based on previous literature measurements (e.g., Chung et al., 2021; Cavusgil & Zou, 1994), we employed a variety of methods to maximize response rates, including follow-up emails and phone calls, referrals from well-known and reputable industry leaders, and Q&A services related to our findings. Through these efforts, we received responses from 286 MCNs, of which 75 were deemed unusable (e.g., incomplete questionnaire, not having responded from two respondents of the MCN, and unreasonable actual performance data). In total, 211 valid datasets were collected from the MCN industry, covering 13 industrial sectors including beauty, food, fashion, electronic products, education, financial services, real estate, construction, healthcare products, horticulture, skin care products, video production, and OTO (online-to-offline) services. The diversity of industries of our respondents' firms enhances the generalizability of the findings. This further ensures that our research findings are applicable to various MCNs in China (Bell et al., 2022). Our response rate is around 26.3%. This response is consistent with that revealed in the extant literature, which is adequate for statistical analyses (Bell et al., 2022; Blunch, 2012; Chung et al., 2015; Liao et al., 2023). Consistent with previous research, our respondents have used social media platforms (e.g., TikTok, Taobao, and KWAI) and online B2B trading platforms (e.g., 1688.com) to conduct their B2B businesses (Lee & Chen, 2021; Liao et al., 2023). To further clarify the B2B context of this study, Table 2.8 (see Appendix C) provides detailed information about the sampled MCNs, highlighting their specific characteristics and roles in the B2B live streaming ecosystem. Specifically, Table 2.8 identifies the B2B customers of these MCNs, providing context on the nature of the B2B relationships. This table emphasizes that the target audience of the MCNs in this study consists of other

businesses, such as retailers, wholesalers, and corporate buyers, reinforcing the B2B focus of the research. By detailing the specific roles of these MCNs and their customers, the clarity and validity of the study's B2B context is enhanced.

2.4.2. Measurement Scales

We have followed the guidelines of existing literature to formulate our research measurements (e.g., Cavusgil & Zou, 1994; Chung et al., 2015; Galankashi & Rafiei, 2022; Hu & Chaudhry, 2020). These items are all verified by the extant literature and have high reliability and validity.

Relational bonds strategy: The measurement scales of relational bonds is measured by a seven-point Likert scale (1=strongly disagree; 7=strongly agree) (Chiu et al., 2005; Hu & Chaudhry, 2020). The measurement items examine financial bonds, social bonds, and structural bonds. These three sub-groups are integrated to form the relational bonds strategy construct of MCNs in China. Details concerning the relational bonds strategy are listed in Table 2.1.

TABLE 2.1: MEASUREMENT SCALES

Model Constructs	Chinese MCN enterprises (N = 211)				
	Mean Values	Factor Loading	Cronbach's Alpha	CR	AVE
Relational Bonds Strategy[a]			0.921	0.93	0.53
***Financial Bonds*[a]**			0.846	0.89	0.62
We offer discounts to regular customers in live streaming	5.34	0.769			
We offer discount coupons to encourage future purchases in live streaming	5.09	0.760			
We offer additional discounts if the customers buy more in live streaming	5.16	0.833			
We provide special incentives, such as virtual gifts in live streaming	4.66	0.706			
We offer premium or special offers for transactions through live streaming	5.46	0.691			
***Social Bonds*[a]**			0.896	0.92	0.70
We train our streamers to pay attention to customers' needs	5.69	0.772			
We train our streamers to capture when the customers pay attention to the live	5.10	0.869			
We train our streamers to react to what the customers say in time	5.48	0.859			
We train our streamers to customize recommended products to customers when they describe their requirements	5.37	0.674			
The streamers in our firm send greetings or virtual gifts on special days	5.18	0.836			
***Structural Bonds*[a]**			0.935	0.95	0.83
We train our streamers to prepare in advance and answer customers' questions professionally	5.64	0.793			
We offer prompt responses when we have difficulties or complaints	5.55	0.784			

We train our streamers to offer clear and detailed information about products customers need	5.63	0.820			
We train our streamers to offer valuable information about products to help customers make decisions	5.69	0.811			
Exploration Learning[a]			0.949	0.96	0.83
In information search, we focus on acquiring knowledge of product/service strategies that involved experimentation and high market risks	4.67	0.905			
We prefer to collect information with no identifiable strategic market needs to ensure experimentation in the new product/service development project	4.44	0.913			
Our aim is to acquire knowledge to develop a product/service that led us into new areas of learning such as new markets and technological areas	4.71	0.933			
We collect novel information and ideas that went beyond our current market and technological experiences	4.69	0.924			
Our aim is to collect new information that forced us to learn new things in the new product/service development project	4.61	0.855			
Exploitative Learning[a]			0.942	0.95	0.81
Our aim is to search for information to refine common methods and ideas in solving problem in the new product/service development	5.26	0.894			
Our aim is to search for ideas and information that we can implement well to ensure productivity rather than those ideas that could lead implementation	4.98	0.887			
We search for the usual and generally proven methods and solutions to new product/service development problems	5.08	0.915			
We use information acquisition methods (e. g., survey of customers) that helped us understand and update the firm's current product/service and market	4.95	0.907			
We emphasize the use of knowledge related to our existing product/service	5.13	0.913			
Strategic Performance - Perceptual			0.941	0.953	0.696
Group one[b]			0.905	0.934	0.742
Gain foothold in the industry	5.21	0.882			
Increase the awareness of our product/firm	5.17	0.918			
Increase the awareness of our brand	5.20	0.914			
Respond to competitive pressure	5.15	0.890			
Expand strategically to other industries (e. g., conducting live streaming from the food industry to beauty industry)	4.90	0.678			
Group two[a]			0.909	0.938	0.792
Our firm's strategic position in the market is very strong	4.99	0.875			
Relative to our major competitors, our firm is very competitive in the market	4.89	0.891			
Our market share is very high relative to our major competitors	4.86	0.927			
We have been able to build a leadership position in our industry	4.59	0.867			
Financial Performance - Actual					
Your firm's sales growth in the industry - Actual	17.90%				
Your firm's return on investment (ROI) in the industry - Actual	14.61%				
Your firm's return on asset (ROA) in the industry - Actual	15.46%				

Notes: [a]measured by seven-point scale (1= Strongly disagree; 7= Strongly agree); [b]measured by seven-point scale (1=Not achieved at all; 7=Completely achieved).

Organizational learning: This research follows the guidance of Atuahene-Gima and Murray (2007) to measure the effect of exploratory learning and exploitative learning (1=strongly disagree; 7=strongly agree). This measurement scale has been validated in the context of China (Chung et al., 2015). This scale provides an

assessment of organizational learning capabilities and aims to capture the variation of MCNs in exploratory learning and exploitative learning activities.

B2B performance: The business performance of MCNs is measured by strategic performance and financial performance, following the guidance of the extant literature (e.g., Cavusgil & Zou, 1994; Chung & Kuo, 2018). The strategic performance contains two aspects (Cavusgil & Zou 1994; Chung & Kuo, 2018; Knight & Cavusgil, 2004). The first group reflects the strategic performance by measuring foothold, awareness, and business expansion (1= not achieved at all; 7= completely achieved) (Cavusgil & Zou, 1994). The second group focuses on the strategic performance in the area of competitive advantage (1=strongly disagree; 7=strongly agree) (Blunch, 2012; Knight & Cavusgil, 2004). These two sub-groups are integrated to form the strategic performance construct of MCNs in our study. Regarding the financial performance measurement, prior research reports that sales growth, return on assets (ROA), and return on investment (ROI) are the most often used measurement indicators of financial performance (Galankashi & Rafiei, 2022; Odalo et al., 2016; Wang, 2020). In addition, Galankashi and Rafiei (2022) state the superiority of real financial performance indicators. Therefore, these three dimensions are measured by the actual data (%). The adoption of the three dependent variable indicators can help to obtain more objective financial results (Bell et al., 2022).

Control variables: Eight control variables are employed in this research, including MCN age, industry type, market size, dynamic industrial context, firm size, customer performance turbulence, technological turbulence, and competitive turbulence. Previous literature suggests the impact of business age on business performance (Wiklund & Shepherd, 2005; Wood, 2006). Market size is suggested to have influence on MCN operation in China, because the development of live streaming businesses in different industries results in different market sizes (Wu, 2022). In this study, industry type is also included as a control variable, divided into service industry (coded as 1) and non-service industry (coded as 0). Likewise, MCN is highly dynamic in terms of regulatory constraints (e.g., changes in government policies and platform rules) (Ha, 2019; Si, 2021; TOPKLOUT, 2024). Researchers have supported the role of firm size on organizational business performance (Uhlaner et al., 2013; Weinzimmer et al., 2023). In this study, firm size is measured by the number of employees (Kumar et al., 1999; Weinzimmer et al., 2023). Environmental turbulence factors such as customer performance turbulence,

technological turbulence, and competitive turbulence can also influence business performance (Chung et al., 2015).

The reliability and validity assessments of all measurements are reported in Table 2.2.

TABLE 2.2: CORRELATION MATRIX (N=211)

	1	2	3	4	5	6	7	8	9	10					
1. Year of MCN experience	1.000														
2. Industry type	.131	1.000													
3. Current industry size	-.095	.040	1.000												
4. Dynamic context	-.212**	-.161**	.016	1.000											
5. Firm size	-.075	.109	.422**	.267**	1.000										
6. Customer performance	-.085	.001	.318**	.422**	.097	1.000									
7. Technology	.133	-.161*	.212**	.127	-.037	.147*	1.000								
8. Competitiveness	.074	-.133	.364**	.303**	.041	.317**	.426**	1.000							
9. Exploration learning	.067	.203**	.366**	.011	.113	.113	.190**	.177*	1.000						
10. Exploitative learning	-.058	.231**	.371**	.009	.131	.021	.177**	.080	.211**	1.000					
11. Relational bonds strategy	-.281**	-.209**	.130	.291**	.055	.402**	.237**	.139*	.066	.128	1.000				
12. Strategic performance	.004	.049	.184**	-.087	.180**	.059	.107	.033	.403*	.349**	.218**	1.000			
13. Sales growth	-.084	-.282**	.016	.024	-.040	.116	.024	.139*	.000	-.088	.187**	.037	1.000		
14. ROI	-.026	.123	.085	-.046	.163*	.001	-.004	-.031	.158*	.206**	.135	.270**	.198**	1.000	
15. ROA	-.015	.134	.037	-.078	.120	-.017	.023	-.060	.159*	.228**	.123	.230**	.160**	.787**	1.000

Notes: *p < 0.05; **p < 0.01

2.4.3. Common method bias assessment

Common method bias (CMB) is a critical methodological issue in marketing research. CMB can reduce the validity and influence the results (Chung et al., 2021). This research uses three approaches to reduce the effect of common method bias. First, through the analysis of two strategic performance scales and three actual independent financial indicators, the limitations of individual indicators are remedied, and relatively objective results are obtained (Bell et al., 2022; Galankashi & Rafiei, 2022). The findings concerning the four groups of performance are highly consistent, suggesting the non-existence of the CMB (Podsakoff et al., 2003; Wang & Chung, 2020). Second, this research uses the double-respondent survey methodology to complete our research questions (Chung et al., 2021; Podsakoff et al., 2003). The first senior executive (e.g., CEO, managing director) answered the questions relating to the independent and control variables, while the second senior executive replied to the company's business performance related questions (dependent variables) (e.g., CFO, marketing executive, deputy managing director) (Gilley & Rasheed, 2000). This double respondent technique significantly improves the accuracy of collected data and decreases potential common method variance (Chung et al., 2021; Podsakoff et al., 2003). Third, before formal research, a pilot study (n=5) was employed to test the wording, format, and readability. This adoption may also reduce the study's CMB (Chung & Kuo, 2018; Podsakoff et al., 2003).

2.4.4. Reliability and validity

The validity and reliability are evaluated by recommended statistical analysis (AMOS and SPSS) (Mahmoud et al., 2020). The output results of the structural model have a desirable fit with $\chi 2/df=1.378$, NFI=0.938, IFI=0.907, TLI=0.973, CFI=0.980, and RMSEA=0.042 ($p < 0.001$), suggesting a sound reliability and validity (Chung & Kuo, 2018; Hair et al., 2010; Wang & Chung, 2020).

After confirming the fitness of the structural framework, this research further examines the reliability and validity correlation of the research constructs based on the guidance of existing literature (Hair et al., 2010). Blunch (2012) identifies that when the Cronbach's Alpha value is greater than 0.5, a strong reliability of the constructs can be confirmed. As shown in Table 2.1, the Cronbach's Alpha values are all higher than 0.8, and all

composite reliability (CR) values exceed 0.8, suggesting powerful reliability (Hair et al., 2010; Wang & Chung, 2020). Furthermore, the factor analysis method also shows a strong reliability of the constructs established. All factor loadings exceed 0.6, and all variance-inflating factor (VIF) values are lower than 4.0 (Table 2.3-Table 2.6). All validity and reliability values are lower than the suggested threshold, confirming adequate validity and reliability of the variables examined in the study (Blunch, 2012).

2.4.5. Endogeneity tests

Despite relational bonds being proposed as exogenous variables that influence audience behavior in live streaming activities (Hu & Chaudhry, 2020; Chiu et al., 2005), concerns about endogeneity may arise due to potential issues such as omitted variable bias and measurement errors (Hult et al., 2018; Jean et al., 2016). To mitigate such endogeneity problems, this study has used an instrumental variable (IV) approach. This approach, as recommended by Bascle (2008), is commonly used in marketing research to address potential endogeneity concerns.

In this case, an appropriate IV is a variable that influences the relational bonds strategy but does not directly impact MCNs' performance. Moreover, the IV should not be correlated with the error term in the model, ensuring that it meets the exogeneity condition (Bascle, 2008; Hult et al., 2018). As such, this study introduces two IVs, namely industry-specific regulatory changes and government policy changes (1 = minor change to 7 = major change) (Liao et al., 2023; Si, 2021). These variables are expected to indirectly affect the relationship between MCNs and their customers, but not their performance outcomes (see Appendix D). To test for endogeneity, we employ the two-stage least squares (2SLS) regression technique, the results of which are reported in Appendix D. The findings suggest that endogeneity does not pose a significant issue in this study.

2.5. Results

Hierarchical regression analysis is adopted to test the research hypotheses with the mean-centered method (Blunch, 2012; Chung et al., 2021). This method is particularly useful for understanding the contributions of multiple predictors, such as relational bonds strategy and organizational learning capabilities, in explaining B2B performance within the context of MCNs. This statistical method provides a robust framework for examining the impact of various independent variables on business performance while controlling for other factors

(Blunch, 2012; Hair et al., 2010). By structuring the analysis this way, the results can reflect the true relationship between the key variables (i.e., relational bonds strategy) and MCNs' B2B performance. In addition, hierarchical regression is ideal for testing the moderating effects of organizational learning, such as exploratory and exploitative learning, on the relationship between relational bonds strategy and business performance (Chung et al., 2015). By adding interaction terms between the independent variables and moderators, hierarchical regression allows for exploration of how the effect of relational bonds strategy on business performance changes with different forms of organizational learning capabilities.

Moreover, this study examined the impact of relational bonds strategy on MCNs' business performance. To ensure a thorough understanding of this relationship, this study considered the distinct elements of relational bonds: financial bonds, social bonds, and structural bonds (Hu & Chaudhry, 2020). Initially, this study presented these elements separately to explore their individual contributions. However, after further reflection, this study recognizes the importance of maintaining coherence in the presentation of our results. As such, this study has clarified that relational bonds are treated as a composite construct in this study, given that these elements are closely interrelated and often work in conjunction with one another in practical applications. This approach aligns with the theoretical framework as the relational bonds strategy is seen as an integrated, holistic strategy rather than discrete, isolated components (Hwang, 2005). This allows for more effective capture of the collective impact of financial, social, and structural bonds on MCNs' performance.

The regression analysis results are listed in Table 2.3 to Table 2.6. Regression analysis Model 1 contains seven control variables. The independent variables (i.e., relational bonds strategy, exploratory learning, and exploitative learning) were added to Model 2. The interaction values of relational bonds strategy and organizational learning capability variables have been included in Model 3. As outlined, the dependent variables include strategic performance and financial performance (i.e., sales growth, ROI, and ROA).

2.5.1. Results of B2B strategic performance

The regression results of strategic performance are displayed in Table 2.3. The relational bonds strategy is revealed to have a positive effect on the strategic performance of MCNs (β=0.244, $p<0.01$; H1a). Exploratory learning is confirmed to positively moderate the effect of relational bonds strategy on the strategic performance

of MCNs (β=0.236, $p<0.05$), suggesting support for H2a. Moreover, the interaction of relational bonds strategy and exploitative learning is confirmed to have a negative effect on strategic performance (β=-0.236, $p<0.05$), indicating support for H3a.

TABLE 2.3: REGRESSION RESULTS OF STRATEGIC PERFORMANCE

					Strategic performance	
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	0.004	1.145	0.043	1.255	0.025	1.363
Industry type	0.009	1.109	-0.027	1.230	-0.024	1.278
Current industry size	0.196 *	1.285	0.077	1.504	0.074	1.554
Dynamic industrial context	-0.117	1.370	-0.135 #	1.381	-0.136 #	1.395
Firm size	0.193	1.045	0.143 *	1.073	0.141 *	1.075
Environmental turbulence - Customer preference	0.033	1.383	-0.040	1.641	-0.041	1.653
Environmental turbulence - Technology	0.112	1.274	0.004	1.384	0.000	1.387
Environmental turbulence – Competitiveness	-0.068	1.521	-0.053	1.554	-0.083	1.619
Independent variables						
Exploration learning			0.350 **	2.762	0.344 **	2.797
Exploitative learning			0.013	2.963	0.001	3.137
Relational bonds strategy (H1a, S)			0.244 **	1.469	0.246 **	1.489
Interactions						
Relational bonds strategy × Exploration learning (H2a, S)					0.236 *	2.721
Relational bonds strategy × Exploitative learning (H3a, S)					-0.236 *	3.737
R^2 value	0.093 *		0.246 **		0.262 **	
Adjusted R^2 value	0.057 *		0.204 **		0.214 **	
R^2 value change	0.093 *		0.153 **		0.017 **	
F value	2.589 *		5.892 **		5.386 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 211)

2.5.2. Results of B2B financial performance

The financial performance has been measured by sales growth, ROI, and ROA (actual performance outcomes). The regression results are listed in Tables 2.4,2. 5, and 2.6. Our results suggest that H1b, H2b, and H3b are all supported.

The relational bonds strategy is suggested to be positively related to the financial performance of MCNs in terms of sales growth (β=0.171, p<0.05), ROI (β=0.191, p<0.05), and ROA (β=0.167, p<0.05). These results suggest that H1b is supported. As for organizational learning, exploratory learning is confirmed to have a positive moderating effect on the three financial performance measures (Sales growth: β=0.247, p<0.05; ROI: β=0.378, p<0.01; ROA: β=0.297, p<0.05), while exploitative learning is verified to have a negative moderating effect in the relational bonds strategy and the three financial performance measures' relationship (Sales growth: β=-0.371, p<0.01; ROI: β=-0.411, p<0.01; ROA: β=-0.287, p<0.05). These results also offer support for H2b and H3b.

TABLE 2.4: REGRESSION RESULTS OF SALES GROWTH

	Financial performance – Sales growth					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	-0.080	1.165	-0.069	1.259	-0.123	1.365
Industry type	-0.280 **	1.107	-0.256 **	1.217	-0.275 **	1.263
Current industry size	-0.048	1.285	-0.037	1.507	-0.017	1.554
Dynamic industrial context	-0.137 #	1.380	-0.152 #	1.403	-0.144 #	1.421
Firm size	-0.039	1.045	-0.041	1.072	-0.039	1.075
Environmental turbulence - Customer preference	0.131 #	1.377	0.042	1.707	0.049	1.725
Environmental turbulence - Technology	-0.069	1.270	-0.100	1.381	-0.110	1.384
Environmental turbulence – Competitiveness	0.160 #	1.553	0.167 *	1.595	0.138 #	1.648
Independent variables						
Exploration learning			0.194 #	2.780	0.206 #	2.809
Exploitative learning			-0.179	2.990	-0.238 *	3.160
Relational bonds strategy (H1b, S)			0.171 *	1.540	0.161 *	1.567
Interactions						
Relational bonds strategy × Exploration learning (H2b, S)					0.247 *	2.726
Relational bonds strategy × Exploitative learning (H3b, S)					-0.371 **	3.741
R^2 value	0.119 **		0.149 **		0.188 **	
Adjusted R^2 value	0.084 **		0.101 **		0.133 **	
R^2 value change	0.119 **		0.030 **		0.039 **	
F value	3.375 **		3.129 **		3.462 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 211)

TABLE 2.5: REGRESSION RESULTS OF ROI

Financial performance – ROI						
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	-0.034	1.145	0.020	1.255	0.000	1.363
Industry type	0.117	1.109	0.098	1.230	0.103	1.278
Current industry size	0.057	1.285	-0.009	1.504	-0.015	1.554
Dynamic industrial context	-0.056	1.370	-0.076	1.381	-0.078	1.395
Firm size	0.116 #	1.045	0.086	1.073	0.083 *	1.075
Environmental turbulence - Customer preference	-0.013	1.383	-0.043	1.641	-0.045	1.653
Environmental turbulence - Technology	0.081	1.274	0.007	1.384	0.002	1.387
Environmental turbulence – Competitiveness	-0.081	1.521	-0.050	1.554	-0.089	1.619
Independent variables						
Exploration learning			-0.020	2.762	-0.029	2.797
Exploitative learning			0.197 #	2.963	0.186 *	3.137
Relational bonds strategy (H1b, S)			0.167 *	1.469	0.170 *	1.489
Interactions						
Relational bonds strategy × Exploration learning (H2b, S)					0.297 *	3.721
Relational bonds strategy × Exploitative learning (H3b, S)					-0.287 *	3.737
R^2 value	0.052		0.096 *		0.143 **	
Adjusted R^2 value	0.014		0.046 *		0.086 **	
R^2 value change	0.052		0.044 *		0.047 **	
F value	1.383		1.912 *		2.515 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 211)

TABLE 2.6: REGRESSION RESULTS OF ROA

	Financial performance – ROA					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	-0.024	1.142	0.027	1.252	-0.012	1.360
Industry type	0.097	1.106	0.093	1.226	0.092	1.274
Current industry size	0.119	1.319	0.075	1.530	0.078	1.580
Dynamic industrial context	-0.023	1.352	-0.042	1.363	-0.040	1.377
Firm size	0.163 **	1.045	0.139 *	1.072	0.137 *	1.075
Environmental turbulence - Customer preference	-0.034	1.372	-0.086	1.639	-0.087	1.651
Environmental turbulence - Technology	0.027	1.257	-0.043	1.369	-0.052	1.371
Environmental turbulence – Competitiveness	-0.064	1.494	-0.042	1.529	-0.092	1.595
Independent variables						
Exploration learning			0.022	2.772	0.019	2.808
Exploitative learning			0.115	2.952	0.083	3.126
Relational bonds strategy (H1b, S)			0.191 *	1.476	0.190 *	1.496
Interactions						
Relational bonds strategy × Exploration learning (H2b, S)					0.387 *	3.721
Relational bonds strategy × Exploitative learning (H3b, S)					-0.411 **	3.739
R^2 value	0.044		0.095 *		0.120 **	
Adjusted R^2 value	0.006		0.045 *		0.062 **	
R^2 value change	0.044		0.052 *		0.025 **	
F value	1.151		1.901 *		2.076 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 211)

2.6. Discussion and research implications

This research reveals the significant and positive effect of the relational bonds strategy on the strategic and financial performance of MCNs in the B2B live streaming sector. The findings of this study also confirm the significant and positive moderation roles of exploratory learning in the relational bonds strategy and B2B business performance dyad. Conversely, exploitative learning has a negative effect in the relational bonds strategy-B2B business performance framework. As such, the results of this study provide novel insights into how and when relational bonds strategy matters in B2B business performance. These results hugely progress the development of RBV theory. The key functions of this theory have been broadened to B2B operations of MCNs (e.g., Anand & Delios, 2002; Barney, 1991). By successfully revealing the role of organizational learning in the relationship between relational bonds strategy and B2B business performance of MCNs, our study also extends the theoretical application of OL theory. Based on our results, researchers can now consider the integrative effect of both OL theory and RBV theory in their investigations concerning relational bonds strategy, organizational learning, and B2B business performance. These results also broaden the theoretical application of organizational learning from managerial ties and competitive strategies to the investigation of MCNs' B2B

operations (e.g., Chung & Ho, 2021; Chung et al., 2005; March, 1991). Our study also extends the function of relational bonds strategy from B2C to B2B operations. In sum, our study contributes to the wider literature on RBV theory and OL theory and provides practical insights for managers in the MCN industry. The findings contribute to a deeper understanding of the strategic management of MCNs and similar firms in the digital economy. In addition, the findings provide valuable insights and actionable guidelines for MCN managers and B2B practitioners. While this study specifically analyzed MCNs operating in B2B live streaming commerce, the implications of these findings extend to other firms that engage in dynamic, technology-driven business models, such as digital marketing agencies, e-commerce platforms, and online content creators.

2.6.1. Theoretical implications

This research findings offer several theoretical implications for the research on RBV theory, OL theory, MCNs, and B2B operations.

First, this study advances the theoretical development of RBV theory in relation to relational bonds strategy and MCN B2B performance. Relational bonds, such as financial incentives methods, social interactions skills and organizational talent management, are organizational resources that are valuable, rare, unique and irreplaceable (Anand & Delios, 2002; Barney, 1991; Hart, 1995). Hence, MCNs can build on the RBV theory by employing relational bonds strategy to achieve their sustainable competitive advantages (Barney, 1991). As shown in our study, the assimilation of RBV theory and relational bonds strategy can lead to superior strategic performance and financial performance. These findings broaden the theoretical application of RBV theory to MCN B2B operations. These results offer theoretical implications for research on RBV and relational bonds strategies. Our study demonstrates how MCNs can leverage their relational bonds resources to obtain their B2B performance goals. Consequently, the importance of RBV and its associated relational bonds strategy in achieving B2B performance for MCNs are highlighted in our research. As such, researchers on the RBV theory can now consider relational bonds strategy as well as those already revealed in the literature (e.g., manufacturing strategy, digital technology strategy) in their utilization of this vital organizational and B2B theory (Anand & Delios, 2002; Barney, 1991; Dangayach & Deshmukh, 2001; Elia et al., 2021; Liu et al., 2023b; Schroeder et al., 2002).

Second, building on OL theory (Chung et al., 2015; March, 1991), this study theorizes and confirms that organizational learning can be used as a key theoretical foundation for research relating to relational bonds strategy, organizational learning, and B2B performance. Our study confirms that exploratory learning and exploitative learning can differently moderate the relationship between the relational bonds strategy and business performance. Considering the exploratory nature of the MCN industry (e.g., new knowledge in supply chains and innovations), exploratory learning can improve customer satisfaction by establishing a good strategic reputation and repeat buying behavior (Atuahene-Gima & Murray, 2007). On the contrary, exploitative learning negatively moderates business performance. This latter result might be caused by the rapid pace of technological change in the MCN industry and incremental exploitative learning is probably not sufficient to keep pace with new knowledge arising in this industry (Liao et al., 2023). The undesirable role of exploitative learning on MCNs' business performance is thus confirmed. By confirming the role of organizational learning in the relational bonds strategy-business performance conceptualization, our study offers two theoretical implications for OL theory. One, our study confirms that researchers should consider separating exploratory learning and exploitative learning in their relational bonds strategy and B2B performance conceptualization. Consistent with that already revealed in the literature, exploratory learning and exploitative learning are suggested to have varied contingent effects for competitive strategies-performance, managerial ties-performance, as well as the relational bonds strategy-B2B performance paradigm (Bettis-Outland et al., 2021; Chung & Ho, 2021; Chung et al., 2015; March, 1991; Santos-Vijande et al., 2012; Schilling & Fang, 2014; Sima et al., 2024). Two, by properly matching organizational learning and RBV theoretical applications (e.g., exploratory learning and relational bonds strategy), B2B and MCN firms can obtain their business performance objectives.

Lastly, as reported, relational bonds strategy is suggested to have a significant influence on consumer engagement, consumer purchase behavior, and shopping intention (Alagarsamy et al., 2021; Gu & Wang, 2016; Hu & Chaudhry, 2020). By confirming the effect of relational bonds strategy on B2B performance, our study advances the use of relational bonds strategy from existing B2C to B2B research. This expansion indicates that researchers can consider employing relational bonds strategy to yield higher consumer purchasing intention, increase consumers' repurchase behavior and generate superior B2B performance in the live streaming and MCN industry (e.g., Elia et al., 2021; Moderno et al., 2024; Wang & Lee, 2023). The usage of relational bonds strategy is significantly broadened.

2.6.2. Managerial implications

The outcomes of this research provide a number of managerial implications for MCNs and similar B2B firms. The results of this study demonstrate that a positive relational bonds strategy can be used to enhance the effect of both strategic performance and financial performance for MCNs (Alagarsamy et al., 2021; Gu & Wang, 2016; Hu & Chaudhry, 2020). Specifically, MCN executives are encouraged to strategically deploy relational bonds (financial, social, and structural) during live streaming interactions to strengthen relationships, enhance trust, and accelerate business decision-making cycles (Hu & Chaudhry, 2020). Additionally, upstream manufacturers and suppliers entering the B2B live streaming arena should prioritize collaborations with capable MCNs to fully leverage live streaming's strategic advantages, including real-time negotiation, transparency, and accelerated purchasing decisions. As such, executives of MCNs should fully consider using relational bonds strategy to develop strong relationships with MCN customers (e.g., wholesalers, retailers, and reselling agents) because such relationships can help MCNs obtain stronger business performance.

Moreover, the outcomes of this study suggest the importance of cultivating exploratory learning within MCN organizations. Executives of MCNs should assert the acquisition of new knowledge and innovations to enhance their exploratory learning capability (Chung et al., 2015; Hansen et al., 2019). By focusing on the building of exploratory learning capability, MCNs can obtain new insights and establish creative/innovative projects that can help the implementation of relational bonds strategy. This alignment can further advance MCNs' business performance. The employment of exploratory learning enables MCNs to adapt in a timely manner to changes in the industry landscape, thereby enhancing their strategic and financial outcomes (Hu & Chaudhry, 2020; Mao et al., 2022).

Conversely, the dark side of exploitative learning capability suggests executives of MCNs need to avoid excessively relying on existing knowledge and business fields in the development of their B2B operations (Atuahene-Gima & Murray, 2007; March, 1991). In a rapidly advancing technologically-focused sector, traditional incremental exploitative learning is unlikely to match the speed of innovation and changes in MCN industries (Dhir & Dhir, 2018; March, 1991). As such it is important for executives of MCNs to be fully aware that exploitative learning and relational bonds strategy is likely to act as a mis-match, which may have a negative effect on their B2B performance (Chung & Ho, 2021; Lee & Miller, 1996).

From a broader societal perspective, our research underscores how emerging digital business practices can reshape industry dynamics and contribute to economic growth. By highlighting the increasing relevance and effectiveness of B2B live streaming commerce, our study suggests that greater transparency and efficiency in industrial markets can enhance supply chain resilience, lower transaction costs, and stimulate economic activity (Liao et al., 2023; Xue & Liu, 2022). Policymakers and industry regulators might benefit from our findings by recognizing live streaming's growing strategic importance, thus providing supportive policy frameworks or training programs aimed at boosting the digital capabilities of enterprises (Xue & Liu, 2022).

In conclusion, while this study primarily investigates MCNs, the findings are widely applicable to firms that engage in B2B live streaming or similar digital business models. Our research underscores the importance of relational bonds and organizational learning as key drivers of business performance, offering valuable insights for firms seeking to enhance their strategic and financial outcomes in the digital economy.

2.7. Limitations and future research directions

Several limitations must be considered and may inspire future study. First, this research employs a cross-sectional quantitative methodology. The findings that are established in this study can be verified if they hold over time. A longitudinal study allows researchers to track changes over time, thereby providing deeper and more complete understanding of the variables that are postulated in this study. Second, this research only investigates the contingent factors of organizational learning capabilities in the relationship between relational bonds strategy and B2B performance. However, there are other moderators which may influence the effect of relational bonds strategy and B2B performance. For example, regional policies, such as government incentives, might also influence MCNs' operations. A larger extent of governmental assistance for live streaming business may promote the adoption of financial bonds and reward better business performance. Therefore, future research can consider when and how external sources such as regional regulation, customer characteristics, and censorship of platforms can moderate the relationship between relational bonds strategy and MCN B2B performance (Shi et al., 2020; Si, 2021). Third, this research only focuses on the traditional relational bonds theory (e.g., Berry, 1995; Berry & Parasuraman, 2004). The influence of the three relational bonds items (i.e., financial bonds, social bonds, and structural bonds) are suggested as useful factors for the success of MCNs (Gu & Wang, 2016; Hu & Chaudhry, 2020; Leeraphong & Sukrat, 2018). Nevertheless, relational bonds strategy

may also be formed in terms of convenience, structure (structural), finance (financial), empathy, and social bonds in online business (Alagarsamy et al., 2021). Hence, it is important for future research to explore other elements of relational bonds strategy and re-test the results established in this study. Only then can the conclusion drawn in this study be confirmed to be generalizable. Last, the data used is specific to MCN companies operating in the B2B live streaming sector. Given that MCNs serve as intermediaries between principals and B2B customers, the findings of this study are directly applicable to the MCN industry. However, the findings of our study may not be limited solely to MCNs. The principles discussed—such as relational bonds strategy and organizational learning—could potentially apply to other companies engaging in B2B live streaming activities, such as brands or manufacturers conducting live streaming directly with their B2B clients. Therefore, future research could explore how the findings from this study apply to other types of companies engaged in B2B live streaming commerce, thus broadening the scope of our research beyond MCNs in different organizational settings. Future research could explore the applicability of these findings to other types of companies operating in similar contexts. This would help extend the relevance of our study's conclusions.

Chapter 3: Contribution - Doctorate with Publications

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STATEMENT OF CONTRIBUTION DOCTORATE WITH PUBLICATIONS/MANUSCRIPTS

We, the student and the student's main supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the student's contribution as indicated below in the Statement of Originality.

Student name:	Yiming Yang
Name and title of main supervisor:	Henry Chung, Professor in Marketing
In which chapter is the manuscript/published work?	Chapter 3 is published

Describe the contribution that the student and members of the supervisory team have made to the manuscript/published work:[1]

The student made the primary contribution to the manuscript/published work, including the literature review, data collection, data analysis, and preparation of the manuscript draft. Members of the supervisory team provided academic guidance, critical feedback on the research design and interpretation of results, and editorial comments during the development of the manuscript.

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Chapter 3

IT Affordance, Organizational Learning, Business Networking and B2B Performance: A Multi-Channel Network Perspective

Abstract

IT affordances are increasingly employed to increase the efficiency and outcome of live streaming e-commerce. Despite this trend, research exploring the relationship between specific IT affordances, such as visibility, meta-voicing, and guidance shopping (VMG), and Business-to-Business (B2B) performance in Multi-Channel Network (MCN) businesses is still unknown. Our study is one of the pioneering efforts to investigate the integrative effect of dynamic capability (DC) theory and IT affordances in B2B research. By analyzing the experience of 229 MCN organizations in China, our results reveal the positive effect of VMG IT affordances on channel and economic performance. Our research also successfully identifies the contingent role of organizational learning and business networking in the VMG IT affordance-B2B performance dyad. By integrating organizational learning theory and organizational networking theory with DC theory, we provide a comprehensive framework that explains how MCNs can adapt and sustain competitive advantage in B2B live streaming environments. The findings show that business networking and exploratory learning positively enhance the effect of IT affordance strategy on B2B performance, while exploitative learning has a negative contingent effect in an IT affordance-B2B framework. These findings offer both theoretical contributions and practical implications, guiding MCN managers in leveraging VMG IT affordances for sustained growth and competitive advantage.

Keywords: MCN (multi-channel network), IT affordance, Dynamic capability, Organizational learning theory, Organizational networking theory, B2B performance

3.1. Introduction

The emerging development of B2B (business-to-business) live streaming offers a promising new business model for enhancing customer engagement and driving business success in e-commerce (Ayu et al., 2022; Liao et al., 2023; Xu et al., 2020). Recent research concerning B2B e-commerce has investigated the structure of B2B live streaming and has identified three primary components of B2B live streaming structure: upstream suppliers (e.g., manufacturers, vendors, and factories), midstream organizations, and downstream customers (e.g., wholesalers, retailers, and resellers) (iiMedia, 2022; Wang et al., 2022; Xue & Liu, 2023). Within this research stream, Multi-Channel Networks (MCNs) are vital midstream players that collaborate with content creators, such as streamers and influencers, to enhance their operations and expand their reach in the B2B live streaming industry (CIW, 2022; Si, 2021). Acting as intermediaries, MCNs connect content creators with advertisers, sponsors, and other business opportunities (Mao et al., 2022; Shi et al., 2020). While MCNs do not directly own the content, they leverage their ability to manage multiple channels of interaction between creators, platforms and customers, facilitating engagement and purchases for their principals (upstream suppliers) (Wang et al., 2022). Consequently, MCNs function as midstream intermediaries. Their unique position in the B2B digital ecosystem, namely Principals-MCNs-B2B customers, enables them to play a pivotal role in shaping the dynamics of content production, distribution, and monetization in today's rapidly evolving media landscape (iiMedia, 2022). Despite the growing significance of MCNs in B2B live streaming, empirical research on their B2B performance remains limited (Liao et al., 2023). In this study, we conceptualize B2B performance as a multidimensional construct encompassing both channel performance and economic performance (Cavusgil & Zou, 1994; Morgan et al., 2004). Channel performance reflects the effectiveness of MCNs in managing B2B relationships, including customer satisfaction, intermediary coordination, loyalty, and brand reputation within the digital distribution ecosystem (Gensler et al., 2007; Sheu & Hu, 2009). This is particularly relevant in live streaming commerce, where real-time interaction and relationship quality directly affect engagement and conversion (Sima et al., 2024; Wang et al., 2022). Economic performance, by contrast, captures financial outcomes such as sales growth, profit, return on investment (ROI), return on assets (ROA), and market share (Cavusgil & Zou, 1994; Morgan et al., 2004). In dynamic environments like B2B live streaming, such outcomes are increasingly driven by a firm’s ability to leverage digital affordances and create immersive, personalized

experiences for B2B customers (Dong & Wang, 2018; Sun et al., 2018). By examining these aspects, this study provides new insights into the strategic role of MCNs in digital commerce and B2B live streaming ecosystems.

Among the strategies presented in the extant literature, IT affordances represent valuable strategies in live streaming activities (e.g., Dong & Wang, 2018). The concept of affordances originally described how users perceive opportunities for action in their environment (Gibson, 1977). In the context of IT systems, IT affordances are the features or characteristics of the organizations or platforms that enable users to take specific actions or make certain decisions (Volkoff & Strong, 2013). These affordances include elements such as visibility, meta-voicing, and guidance shopping (Dong & Wang, 2018). Prior studies have predominantly examined IT affordances in B2C settings, linking them to consumer engagement, live streaming interactivity, and purchasing behavior (e.g., Dong & Wang, 2018; Moon, 2020). However, as B2B transactions undergo increasing digital transformation, IT affordances can gain relevance in B2B business models, as they facilitate knowledge engagement and transactional efficiency (Wang et al., 2022; Xie & Luo, 2021). IT affordances, such as visibility affordance (enhancing product transparency), meta-voicing affordance (enabling real-time business communication), and guidance shopping affordance (streamlining decision-making for B2B buyers), have the potential to optimize B2B interactions, improve transaction efficiency, and strengthen buyer-supplier relationships (hereafter VMG IT affordances). Given MCNs' central role in the B2B live streaming ecosystem, exploring how VMG IT affordances affect their performance in the B2B live streaming industry is critical (Hua et al., 2024; Naik et al., 2020). Addressing this gap, our study extends the conceptual and empirical understanding of VMG IT affordances in B2B markets. The purpose of the study is to demonstrate their strategic role beyond B2C applications and reinforce their relevance to digital B2B marketing and organizational performance.

Although IT affordances can potentially result in superior MCN B2B performance, existing research indicates that IT affordances alone may not be sufficient to generate a sustainable competitive advantage in the B2B model (e.g., Mata et al., 1995). Recognizing this limitation, prior affordance literature has incorporated dynamic capability (DC) theory as a foundational perspective. These researchers highlight the role of IT-related affordances in enabling firms to adapt, integrate, and reconfigure resources in response to dynamic market conditions (e.g., D'Ambra et al., 2022; Jacobsen & Nielsen, 2019; Zhu & Jin, 2024). As DC theory stresses the

need for firms to sense, seize, and transform capabilities to maintain competitiveness in dynamic markets, VMG IT affordances can function as enablers of this process (Schreyögg & Kliesch-Eberl, 2007). For example, visibility affordance can enhance market sensing by providing advanced product displays and analytics; meta-voicing affordance can strengthen opportunity-seizing through real-time engagement and feedback; and guidance shopping affordance can support business transformation by streamlining purchasing processes through AI-driven personalized shopping experiences (e.g., Sun et al., 2019; Volkoff & Strong, 2013). Through these mechanisms, VMG IT affordances can enable MCNs to adjust to volatile market conditions and sustain long-term competitiveness. This approach is consistent with the DC perspective, where VMG IT affordances can act as a reconfigurable capability that supports organizational adaptation and competitive advantage (D'Ambra et al., 2022; Zhu & Jin, 2024). Building on this perspective, our study adopts a DC lens and conceptualizes VMG IT affordances from an organizational perspective. Our research focuses on how MCNs leverage these mechanisms to enable business transactions and drive performance in B2B live streaming markets (Strong et al., 2014).

In addition to IT affordances, organizational learning can play a critical role in supporting dynamic adaptability (Do et al., 2022; Martelo et al., 2013). As emphasized in organizational learning theory, organizational learning, including exploratory and exploitative learning, refers to a firm's ability to acquire, process, and apply knowledge to decision-making and performance (March, 1991). In the digital environment and MCNs' operations, exploratory learning helps organizations engage with emerging technologies, such as artificial intelligence (AI) and virtual reality (VR), and enhances their ability to leverage VMG IT affordances. In contrast, exploitative learning supports incremental improvements but may limit flexibility in volatile digital markets (Hindasah & Nuryakin, 2020). From a DC perspective, these internal learning mechanisms influence organizations' ability to dynamically adjust to environmental changes and seize new opportunities (Hindasah & Nuryakin, 2020; Santos-Vijande et al., 2005). Therefore, working synergistically with VMG IT affordances, these organizational learning processes either enhance or hinder firms to continuously reconfigure their operational processes and drive competitive performance in dynamic B2B live streaming markets (Do et al, 2022; Lee et al., 2001). In this study, we conceptualize organizational learning along these two key dimensions, recognizing their respective roles in enabling MCNs to effectively leverage VMG IT affordances in dynamic B2B environments. Further, when integrated with organizational networking theory and DC, this framework

provides insights into how external relationships contribute to dynamic adaptability of VMG IT affordances (Rothaermel & Hess, 2007; Salvato & Vassolo, 2018). Business networking refers to a firm's external ability to establish and maintain external relationships that facilitate knowledge exchange, resource access, and market intelligence (Burt & Soda, 2021; Mitrega et al., 2012). In the MCN context, business networking allows organizations to build trust-based partnerships with upstream suppliers and downstream B2B customers, helping them co-create value through live streaming campaigns. These external ties also provide MCNs with timely insights into market trends, technological advancements, and customer preferences, enabling them to refine their IT affordance strategies to better serve B2B clients (Mao et al., 2022; Zhang & Wu, 2017). From a DC perspective, business networking functions as an externally embedded resource orchestration mechanism that enhances a firm's flexibility and responsiveness in dynamic environments (Vrontis et al., 2020). Despite these theoretical insights, existing studies have not fully explored how VMG IT affordances interact with organizational learning and business networking to improve MCN B2B performance (Dong & Wang, 2018; Shi et al., 2020). To address this gap, this study integrates DC theory, organizational learning theory, and organizational networking theory to develop a framework. This integrated theoretical framework aims to explain how MCNs can leverage VMG IT affordances as a specific type of dynamic capability and align them with organizational learning and business networking to achieve superior B2B performance (Chung & Ho, 2021; Do et al., 2022).

Our study makes theoretical contributions in four key areas. First, existing research has largely explored the effect of IT affordance in the B2C context (e.g., Dong et al., 2016; Sun et al., 2019). We broaden the scope of IT affordance research by applying it to the B2B sector. By successfully exploring the effect of VMG IT affordance in a B2B and MCN setting, our research offers valuable and new theoretical insights concerning the usage of VMG IT affordances (Liao et al., 2023; Volkoff & Strong, 2013). Second, through a DC lens, our study positions IT affordances as a dynamic capability of MCNs that enables them to reconfigure resources and sustain competitive advantage in B2B live streaming commerce. This expands the theoretical application of DC theory by contextualizing it in the B2B live streaming and MCN environment. While prior studies have often focused on competitive live streaming strategies, we extend its scope to examine VMG IT affordance implementation and MCN strategic operations (Dong & Wang, 2018; Mao et al., 2022). Third, by emphasizing the integration of DC with organizational learning theory and organizational networking theory, our research

contributes to the theoretical advancement of these frameworks, particularly in the context of IT-driven B2B ecosystems (Santos-Vijande et al., 2012). Specifically, we highlight the contingent roles of organizational learning and business networking in the relationship between VMG IT affordances and B2B performance (Chung & Ho, 2021; March, 1991). Lastly, we propose a comprehensive framework for understanding how MCNs can strategically leverage these managerial mechanisms to enhance B2B success when implementing VMG IT affordance strategies (Santos-Vijande et al., 2005; Vrontis et al., 2020). While the study is grounded in the MCN and B2B live streaming context, the theoretical framework and core mechanisms have broader relevance across digitally enabled B2B marketing environments. Thus, the findings offer practical guidance for MCNs and B2B digital firms on leveraging VMG IT affordances alongside exploratory learning and business networking to drive superior performance in B2B live streaming commerce.

3.2. Literature review

3.2.1. B2B live streaming and the role of MCNs

Live streaming e-commerce expands the market for business-to-business (B2B) online shopping (Liao et al., 2023). B2B live streaming provides businesses with an interactive and compelling medium to engage with their customers, build stronger connections, and promote performance growth (Liao et al., 2023; Ripton, 2016). According to the report from Convertlab (2020), B2B live streaming in China is projected to reach a market size of ¥19,126.9 million by 2024, indicating a substantial growth in the number of enterprises entering this sector. Leading Chinese e-commerce giants like Alibaba, JD, and PDD have pioneered the development of B2B live streaming services (Cortese, 2020). For instance, Alibaba, as the largest e-commerce platform in China, has successfully entered the B2B live streaming marketplace by launching 1688.com, focusing on specialized B2B services (Liao et al., 2023). Additionally, JD, another key player in live streaming, is implementing a New-Channel strategy to connect brand owners with B2B customers (Huakui, 2020). These examples highlight the rapid expansion of B2B live streaming, with an increasing number of enterprises leveraging this digital marketing method to enhance engagement, streamline transactions, and drive business growth.

Multi-Channel Networks (MCNs), originally emerging in consumer-facing platforms like YouTube, now serve as key intermediaries in B2B live streaming. In this context, MCNs connect upstream suppliers with

downstream intermediaries such as wholesalers and retailers (Mao et al., 2022; Si, 2021; Xue & Liu, 2023). While they do not own the content produced by creators, MCNs act as intermediaries, connecting creators with advertisers, sponsors, and other business opportunities (TOPKLOUT; 2023). Their role involves managing multiple channels of interaction between content creators, platforms, and customers, leveraging these connections to generate mutual benefits for all involved (iiMedia, 2022). MCNs assist collaborators to do online business, in terms of producing, programing, funding, partnering management, audience development, digital rights, intellectual property and monetization (Statista, 2023). Therefore, MCNs are characterized by their ability to scale content distribution and engagement across diverse digital ecosystems, making them key players in the modern media landscape.

In the B2B live streaming context, MCNs are intermediaries between upstream businesses (i.e., principals) and B2B buyers (i.e., wholesalers, resellers) (Lobato, 2016; Xue & Liu, 2023). Thus, MCNs operate in a B2B marketing model as Principals (i.e., upstream organizations) – MCNs (i.e., midstream) – MCNs customers (e.g., downstream customers: wholesalers, retailers, and resellers) (Chen et al., 2024; Pu et al., 2021). In the Principals–MCNs relationship, MCNs receive a link fee and a commission proportional to the live streaming sales sold by their principals (Li et al., 2023; Wang et al., 2023). In the MCN-B2B customer mode, MCNs connect and interact with their customers (e.g., intermediaries, retailers, and resellers) to facilitate B2B business activities such as live streaming item purchases (He et al., 2024; Wang et al., 2023). Therefore, MCNs can assist their principals to attain profits and build strong relationships with B2B customers by operating effective and efficient live streaming campaigns (Li, 2021; Mao et al., 2022).

3.2.2. Dynamic capabilities view of IT affordances

Initially rooted in ecological psychology, the concept of affordances describes the perceptual attributes of an object to describe the relationships between individuals and the cognitive environment, emphasizing how individuals interact with their surroundings (Gibson, 1977). While the original conceptualization of affordances emphasizes the user's experience (e.g., customers), recent advancements have extended the applicability of affordances to organizational contexts (e.g., Li et al., 2023; Lin et al., 2022). As affordances are context-specific, this concept has evolved to include applications in information and communication technology (ICT) and information systems (IS) research (Norman, 1999; Sun et al., 2021). Volkoff and Strong (2013) introduce

the concept "IT affordance" to describe how a user perceives and utilizes the IT characteristics provided by an informational and technological system or platform to achieve a particular action or goal. At an organizational level, IT affordances are conceptualized as potential actions enabled by technological systems, contingent on how organizations design and implement them (Chatterjee et al., 2021). Existing research reports three key components of VMG IT affordances, namely visibility affordance, meta-voicing affordance, and guidance shopping affordance (Dong & Wang, 2018; Sun et al., 2018). Visibility affordance enables products, services, information, and images to be clearly presented to customers, such as displaying products comprehensively (Dong & Wang, 2018). Meta-voicing affordances allow customers to voice their comments and feedback about products during the interaction process with sellers (Moon, 2020). Guidance shopping affordance refers to the customization service in the e-commerce environment to help customers easily find the desired products (Dong et al., 2016; Xie & Luo, 2021).

Despite its growing application, the concept of affordances has faced significant critique for its ambiguity and lack of consensus in definition and application (e.g., Oliver, 2005). Some scholars argue that affordances are not inherent in technological features but emerge from the interaction between an actor and their environment, challenging the notion of affordances as static properties (Oliver, 2005; Stoffregen, 2018). Others highlight the inherent subjectivity of affordances, as their perception and utility can vary widely depending on the actor and context (Davis & Chouinard, 2016). In addition, debates about the ontological status of affordances, their relationship to actions, and their connection to environmental factors add to the conceptual complexity (Michaels, 2003). In the field of organizational studies, these critiques highlight the tension between affordances as user-perceived versus affordances as organizationally enabled. To address these critiques, we adopt a supply-side perspective (Frambach et al., 1998), focusing on how MCNs design and implement VMG IT affordances in the B2B live streaming platforms to facilitate specific actions (Dong et al., 2016). In this study, IT affordance will be defined as the actionable possibilities enabled by MCN organizations that allow MCNs to enhance strategic decision-making, business interactions, and operational efficiency (D'Ambra et al., 2022; Volkoff & Strong, 2013). This perspective focuses on the role of MCNs in designing, enabling, and deploying affordances through online platforms. In this aspect, MCNs can utilize visibility affordance to enhance product clarity by employing advanced visualization tools, meta-voicing affordance to foster real-time interactivity through live chat and feedback systems, and guidance shopping affordance to offer personalized recommendations and

seamless purchasing processes (Dong & Wang, 2018; Sun et al., 2021). The MCN's role in crafting VMG IT affordances aligns with its capabilities to influence B2B customers' actions and outcomes, such as customer engagement and purchasing behavior (Li, 2021; Mao et al., 2022). Therefore, this approach emphasizes the capability of MCNs to design and operationalize VMG IT affordances effectively, enabling strategic outcomes within the B2B live streaming ecosystem.

Dynamic capabilities (DC) theory emphasizes the importance of a firm's ability to reconfigure, build, and integrate capabilities to respond effectively to changing market conditions and achieve sustained competitive advantage (Teece et al., 1997). Recent research has begun to explore the integration of affordance concepts with DC, emphasizing their role in enabling organizational adaptability and strategic outcomes in dynamic environments (e.g., D'Ambra et al., 2022; Jacobsen & Nielsen, 2019). For instance, D'Ambra et al. (2022) demonstrate that affordance actualization enabled by IT artifacts can facilitate engagement and goal-oriented outcomes in digital transformation contexts. D'Ambra et al. (2022) reveals how IT-related affordance aligns with DC's core processes of sensing, seizing, and transforming capabilities, positioning affordances as relational properties that evolve dynamically to enhance organizational performance. Building on this foundation, we conceptualize IT affordances as the dynamic capability that enables organizations to adapt to fast-changing environments and achieve strategic objectives. IT affordances can be aligned with DC's processes by empowering organizations to sense emerging opportunities, seize them through strategic resource deployment, and transform operations to maintain competitiveness (D'Ambra et al., 2022; Volkoff & Strong, 2013). For instance, visibility affordance enhances transparency and clarity in product presentations, enabling MCNs to identify shifting market trends (Dong et al., 2016). Meta-voicing affordance facilitates real-time interaction and feedback collection, allowing MCNs to refine their strategies and meet evolving client needs (Dong & Wang, 2018; Moon, 2020). Guidance shopping affordance streamlines purchasing processes, MCNs can adapt their business models to align with customer demands (Sun et al., 2019). Through these mechanisms, VMG IT affordances can serve as tools that directly support the dynamic capability framework, functioning as organizational enablers of sensing opportunities, seizing them effectively, and transforming resources to thrive in dynamic business environments (Teece et al., 1997). By positioning VMG IT affordances as dynamic capabilities, our study aims to explore their strategic importance in driving superior performance within the B2B

live streaming ecosystem, bridging critical gaps in the IT affordance literature, and extending the understanding of their role in organizational adaptability (D'Ambra et al., 2022; Schilke, 2014).

3.2.3. Integrated theoretical lens: organizational learning theory and organizational networking theory in dynamic capability theory

DC theory provides a foundational theoretical lens to understand how firms continuously adapt, renew, and strategically reconfigure their resources in response to rapidly changing digital environments (Eisenhardt & Martin, 2000; Teece et al., 1997). In this study, we conceptualize IT affordance enactment as a dynamic capability that enables MCNs and B2B firms to sense digital opportunities and reconfigure their operations to enhance performance (Do et al., 2022). Within the DC framework, organizational learning and organizational networking theories offer distinct yet complementary mechanisms for developing these critical dynamic capabilities. Specifically, organizational learning represents an internal foundation of dynamic capabilities, comprising exploratory and exploitative learning processes (Do et al., 2022; Hansen et al., 2019). Simultaneously, organizational networking theory constitutes the external dimension of dynamic capabilities, emphasizing how firms leverage relationships with external factors, such as platform providers, distributors, and customers, to gain access to strategic resources, market knowledge, and collaborative opportunities (Mitrega et al., 2012; Vrontis et al., 2020). Such external networks enable firms to effectively seize and reconfigure resources, complementing internal learning capabilities to better enact IT affordances.

Taken together, this integrated perspective positions organizational learning and business networking as complementary antecedents of dynamic capabilities (Burt & Soda, 2021; Forkmann et al., 2018). Their interplay provides the foundation through which firms can strategically enact VMG IT affordances in ways that enhance adaptability, innovation, and ultimately B2B performance in digital markets (Teece et al., 2016).

3.2.3.1. Organizational learning theory

Do et al. (2022) and Santos-Vijande et al. (2005) define organizational learning as a crucial internal organizational perspective for firms to adapt and thrive in dynamic environments. Organizational learning theory emphasizes the importance of developing exploratory and exploitative learning (Chung & Ho, 2021; March, 1991). Exploratory learning refers to the acquisition and creation of new knowledge, including the

implication of exploration, experimentation, and innovation. Exploratory learning is essential for firms to adapt to new technologies and market trends (Atuahene-Gima & Murray, 2007; Chung & Ho, 2021). As such, the rapid advancement of IT-based technologies (e.g., AI and VR), has significantly affected the live streaming industry. This requires MCNs to utilize exploratory learning to capture innovative knowledge (Shi et al., 2020). Conversely, exploitative learning is essential to improving existing knowledge based on accumulated experience, such as selection, productivity, and implementation (Burt & Soda, 2021; March, 1991). Exploitative learning can help firms improve their operational efficiency and respond effectively to the sustainable market (Do et al., 2022; Kor & Mesko, 2013). However, considering the highly dynamic nature of the MCN and B2B live streaming industry, exploitative learning providers may struggle in such volatile environments (Ha, 2019; Hansen et al., 2019). As organizational learning and DC theorists suggest, the ability to balance exploratory and exploitative learning is essential for sustained adaptability and competitive performance in dynamic contexts (Do et al., 2022; Kor & Mesko, 2013; March, 1991). Our study builds on this framework, proposing that exploratory learning and exploitative learning may play distinct moderating roles in enhancing business performance in the rapidly evolving MCN industry (Santos-Vijande et al., 2005). By integrating these organizational learning approaches with VMG IT affordances, MCNs can reconfigure their capabilities to achieve superior outcomes in B2B live streaming operations.

3.2.3.2. Organizational networking theory

Organizational networking theory highlights the role of external relationships, such as business networking, in providing firms with access to critical knowledge, collaborative opportunities, and market intelligence (Chung et al., 2016; Zhang & Wu, 2017). Building on this foundation, DC theory can be further extended as business networking, enabling organizations to shape their relationships with business partners and reallocate important resources (e.g., investment) (Mitrega et al., 2012). From a DC viewpoint, external networking enhances a firm's flexibility and responsiveness, enabling it to capitalize on VMG IT affordances and improve performance in dynamic environments (Burt & Soda, 2021; Gulati et al., 2000). As the MCN industry is influencing by rapidly evolving technologies and market dynamics, business networking enables MCNs to adapt and thrive (Shi et al., 2020). Thus, our study examines the potential moderating effect of business networking in the relationship between VMG IT affordances and B2B performance. By exploring this contingent effect, we expand the

theoretical scope of DC and organizational networking theory by demonstrating how business networking enhances the impact of VMG IT affordances on business performance in dynamic environments (Burt & Soda, 2021; Forkmann et al., 2018)

3.2.4. Business performance in the B2B live streaming ecosystem

Business and marketing scholars often divide business performance into economic and non-economic aspects (Guthrie & Neumann, 2007). In a B2B context, well-conducted live streaming activities can enhance MCNs' sales (i.e., economic performance) and benefit all members of the live streaming e-commerce chain and distributors (i.e., non-economic performance) (Liu et al., 2022). However, research on non-economic performance remains fragmented (Shi et al., 2020). Cavusgil and Zou (1994) and Morgan et al. (2004) emphasize the importance of channel performance in a multi-channel business environment. This research stream provides novel insights into the channel performance of the MCN industry. Morgan et al. (2004) emphasizes the importance to organizations of assessing channel and economic performance. Channel performance is essential for the flexible operation of distribution channels and for meeting the needs of channel distributors and customers (Gensler et al., 2007; Morgan et al., 2004). Economic performance pertains to the effectiveness, efficiency, and adaptability of a business, such as the percentage of economic results (Morgan et al., 2004). Given the lack of research on MCNs' business performance (Shi et al., 2020), our study evaluates both channel and economic performance in the research conceptualization to provide new and original insights into MCNs' B2B performance.

3.3. Research Hypotheses

DC theory emphasizes the importance of integrating organizational capabilities to navigate change (Salvato & Vassolo, 2018). Within this framework, VMG IT affordances can act as dynamic capabilities that enable MCNs to adapt to environmental changes and achieve strategic goals (D'Ambra et al., 2022; Teece et al., 1997). Complementing DC, organizational learning theory highlights the importance of different types of organizational learning (e.g., exploratory learning and exploitative learning) in influencing adaptability (Atuahene-Gima & Murray, 2007; Kor & Mesko, 2013). Furthermore, organizational networking theory underscores the role of business networking in providing access to critical resources and enhancing flexibility

(Burt & Soda, 2021; Mitrega et al., 2012). Taken together, this study investigates the mechanisms by which VMG IT affordances interact with organizational learning and business networking to support MCNs in navigating the challenges of the B2B live streaming ecosystem (Santos-Vijande et al., 2012; Schreyögg & Kliesch-Eberl, 2007).

Our study postulates that VMG IT affordances (i.e., visibility, meta-voicing, and guidance shopping affordance) positively influence MCNs' business performance, in terms of both channel and economic performance. More, our study also theorizes the contingent role of organizational learning (i.e., exploratory learning and exploitative learning) and business networking in the VMG IT affordances-MCNs B2B performance conceptualization. The hypotheses' details and the conceptual framework are postulated in Figure 3.1.

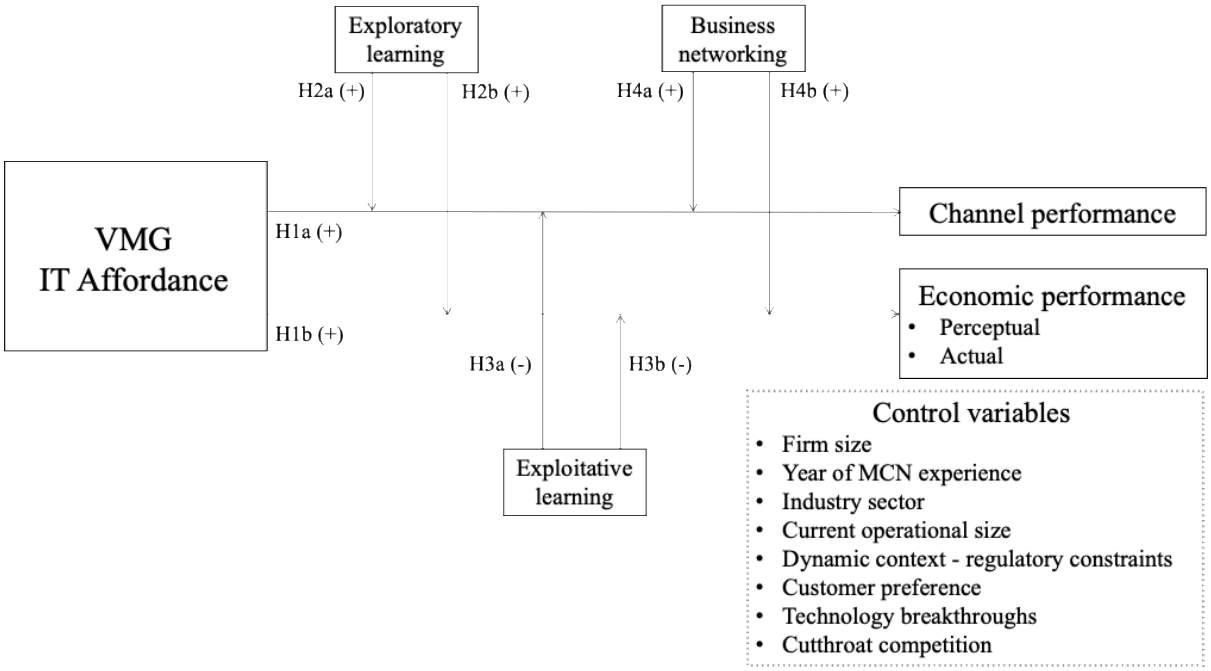

FIGURE 3.1: CONCEPTUAL FRAMEWORK

3.3.1. VMG IT affordances and channel performance

According to DC theory, firms must continuously sense, seize, and transform their capabilities to sustain competitive advantage in dynamic markets (Teece et al., 1997). In this context, VMG IT affordances serve as reconfigurable capabilities that enable MCNs to enhance customer engagement and satisfaction, thereby improving channel performance. For instance, meta-voicing affordance can increase real-time interaction between live streamers and customers (Dong & Wang, 2018). Effective interactions can generate emotional

supports for customer loyalty and interactive customer experiences. These advantages help MCNs to improve customer satisfaction (Dong & Wang, 2018; Saffanah et al., 2023). Likewise, visibility affordance (e.g., visible cues) and guide shopping affordance (e.g., customized service) have also been suggested to promote customer satisfaction (Sun et al., 2018; Xie & Luo, 2021). By reducing customer anxiety and minimizing uncertainty in the B2B model, these affordances contribute to customer trust and satisfaction, thereby reinforcing a firm's ability to adapt and sustain its market position, which is a central objective of DC theory (Leeraphong & Sukrat, 2018). Furthermore, guide shopping affordance may also provide a customized service that can fully address customer requirements and needs. As a result, customer satisfaction can be maximized (Sun et al., 2018). In sum, by continuously adapting VMG IT affordance strategies, MCNs can dynamically reconfigure their digital capabilities to enhance channel performance.

Similarly, brand reputation management, as a form of dynamic capability, plays a vital role in MCNs' ability to sense and seize new business opportunities (Krzakiewicz & Cyfert, 2015). Brand reputation significantly impacts cooperation with B2B partners such as principals, distributors, and customers. Research suggests that VMG IT affordances can help MCNs to increase their firms' reputation in the live streaming industry and this competitive advantage can enhance the channel performance of MCNs (Dong et al., 2016; Leeraphong & Sukrat, 2018; Morgan et al., 2004). Research shows that VMG IT affordances can improve brand reputation by leveraging tools such as meta-voicing for ratings and feedback because these methods can increase social status and enhance customer perception (Dong & Wang, 2018; Sun et al., 2018). Likewise, guidance shopping affordance offers personalized guidance to customers in real-time, whereas visibility affordance provides persuasive cues to B2B customers (e.g., different usage of the products) (Dong & Wang, 2018; Mao et al., 2022). In a B2B context, such dynamic capabilities improve communication efficiency and responsiveness between MCNs and their customers, aligning with DC theory's emphasis on continuous adaptation and resource orchestration (Kotler & Levy, 1969; Teece et al., 1997). Collectively, a strong brand reputation can contribute to channel performance because this sustainable competitive advantage (SCA) can increase the confidence of channel members on MCNs and acquire full cooperation and satisfaction from their channel members (Gensler et al., 2007; Sheu & Hu, 2009). By integrating VMG IT affordances as dynamic capabilities, MCNs can continuously refine their strategies, respond to evolving market demands, and enhance channel performance

through increased customer satisfaction, loyalty, and industry reputation (Krzakiewicz & Cyfert, 2015; Morgan et al., 2004). Therefore, this study hypothesizes:

H1a: VMG IT affordances have a positive effect on the channel performance of MCNs.

3.3.2. VMG IT affordances and economic performance

Researchers focusing on the conceptualization of affordances suggest that utilizing affordances can enhance buying intentions, as this can help organizations to obtain their economic performance goals, such as an increase in sales volume, profit, ROI, and ROA (Lee & Chen, 2021; Saffanah et al., 2023). An increase in sales volume, profit, ROI, and ROA is an important element of economic performance for MCNs (e.g., Cavusgil & Zou, 1994; Morgan et al., 2004). The reasons for the growth in economic performance can be seen in two aspects related to VMG IT affordances.

First, DC theory posits that firms must leverage external signals to reduce uncertainty and enhance decision-making (Teece et al., 2016). VMG IT affordances, such as visibility affordance and meta-voicing affordance, enable MCNs to enhance digital transparency and real-time engagement, minimizing customer uncertainty and strengthening purchase confidence (e.g., Dincelli & Yayla, 2022; Dong et al., 2016). This advantage can improve the economic outcomes of organizations (Ulaga & Kohli, 2018). For example, VMG IT affordances are suggested to positively influence customer purchase intention, thereby increasing business transactions in live streaming campaigns (Xu et al., 2020). In particular, meta-voicing affordances enable MCNs to enhance the electronic word-of-mouth (e-WOM) to reduce customers' uncertainty (Wang et al., 2023). In this aspect, VMG IT affordance technologies, such as online reviews, can reduce buyer uncertainty and increase sales volume in online retail settings (Chen et al., 2019). It is suggested that informational support from VMG IT affordances, such as visual information, individual recommendations, and real-time replies, can increase the relationship between customer certainty and the pricing strategy of MCNs (Mao et al., 2022). From a DC perspective, this ability to create a responsive and transparent purchasing environment strengthens firms' ability to capture business opportunities and sustain long-term relationships (Kim & Wemmerlöv, 2015).

Second, according to DC theory, firms must continuously transform their operational processes and strategic capabilities to remain competitive in dynamic markets (Eisenhardt & Martin, 2000; Teece et al., 1997). Existing

research has reported that MCNs may achieve this transformation through VMG IT affordances, as this strategy enhances customer immersion (Saffanah et al., 2023; Yan et al., 2023). It is reported that the majority of customers in B2B e-commerce seek product information and demonstration (Xu et al., 2020). Visibility and meta-voicing affordances can help B2B customers seek additional product information and demonstration (Dong et al., 2016). A higher product information and demonstration can stimulate customers' quick purchasing behaviors and subsequently result in superior economic performance (Wang et al., 2022). Moreover, VMG IT affordances may also lower customers' risk perception of MCNs as transparent product information and demonstration can help customers fully understand MCNs and their product offering (Zhang et al., 2020). Consequently, a lower risk may enhance MCNs' economic performance because customers are more willing to conduct business transactions with trustworthy firms (McGuire et al., 1988). By supporting this view, Xu et al. (2020) and others have discovered that MCNs often provide guidance shopping affordances through a chat room. It is suggested that customization services can enrich the interaction between live streamers and B2B customers (Li, 2021). This customer engagement can also create a sense of immersive experience and reduce customers' risks of misunderstanding MCNs and their products (Dong & Wang, 2018; Sun et al., 2019). Thus, from a DC perspective, VMG IT affordances act as the dynamic capability that allow MCNs to adjust their business strategies and enhance B2B economic performance in a rapidly evolving market.

H1b: VMG IT affordances have a positive effect on the economic performance of MCNs.

3.3.3. VMG IT affordances, organizational learning and B2B performance

3.3.3.1. VMG IT affordances, exploratory learning and B2B performance

Building on the organizational learning theoretical conceptualization of March (1991), exploratory learning refers to an organizational learning containing the employment of heterogeneous knowledge and ideas. This organizational learning process is crucial for MCNs as it allows them to leverage cutting-edge technologies (Santos-Vijande et al., 2012). As VMG IT affordances are highly technology dependent, the integration of novel technologies enhances MCNs' ability to realize and utilize the potential of VMG IT affordances (Dong et al., 2016).

As outlined in organizational learning theory research, exploratory learning can assist MCNs to better capture intelligent technologies (Atuahene-Gima & Murray, 2007; Chung & Ho, 2021). It is suggested that live streaming activities embracing novel technologies can significantly improve service quality, customer engagement, and customer satisfaction (e.g., Hu & Chaudhry, 2020; Liao et al., 2023; Wongkitrungrueng & Assarut, 2020). As service quality and customer elements are key indicators of channel performance, we propose that exploratory learning can positively moderate the relationship between VMG IT affordances and MCNs' channel performance (Chung & Ho, 2021; Morgan et al., 2004). This proposition can be supported by extant IT affordances research (Chen et al., 2022; Sun et al., 2018). For instance, MCNs employing exploratory learning are more likely to access updated and cutting-edge technologies, such as AI, multifunctional bullet-screens, and virtual trials (TOPKLOUT, 2023). These technologies can advance the implementation of VMG IT affordances (Dong & Wang, 2018). Further, AI visual technologies, as a visibility affordance, offer three-dimensional visualizations that can be used to enhance the customer experience (Sun et al., 2018; Wilson, n.d.). Multifunctional bullet-screens (i.e., incorporating a meta-voicing affordance) can help live streamers capture customers' questions and give timely feedback, thereby improving interaction quality (Chen et al., 2022; Li, 2021). Likewise, MCNs can utilize virtual trial technology to simulate the user experience of the product (Lin et al., 2022; Wilson, n.d.). This technology may also help MCNs build guidance shopping affordance with personalized service (Sun et al., 2018; Wilson, n.d.). Taken together, the advancements affiliated with exploratory learning may not only enhance the implementation of VMG IT affordances, but also lead to strong customer engagement, service quality, and customer satisfaction (Wang et al., 2023). As such, the integration of VMG IT affordances and exploratory learning can lead to superior channel performance for MCNs (Wang et al., 2023).

H2a: Exploratory learning positively moderates the relationship between VMG IT affordances and MCNs' channel performance.

Concurrently, by continuously facilitating the acquisition and use of new technologies, MCNs' exploratory learning process may also stimulate the effect of VMG IT affordances on economic performance (Morgan et al., 2004; Sima et al., 2024). Organizational learning theory suggests that exploratory learning enables organizations to stay ahead in the dynamic digital environment by experimenting with cutting-edge personalized solutions

(Lamberton & Stephen, 2016). By providing effective solutions, customers' purchasing decisions and behavior can be stimulated (Ismagilova et al., 2021). In particular, the integration of VMG IT affordances and exploratory learning allows MCNs to use their novel technologies to influence customer purchasing behavior. As positive purchasing behavior is directly linked to economic outcomes such as sales volume, profit, ROI, and ROA, the interplay of VMG IT affordances and exploratory learning relationship denotes a crucial factor in driving MCNs' economic performance (Cavusgil & Zou, 1994; Sima et al., 2024).

Likewise, building on organizational learning theory (March, 1991), our study highlights the moderating role of exploratory learning in enhancing the economic outcomes of MCNs by fostering the continuous acquisition of new technologies. Research indicates that customers are increasingly willing to conduct online transactions and pay premium prices for engaging novel e-commerce technological experiences (Gregory et al., 2019; Wang, 2020). Exploratory learning enables MCNs to effectively leverage VMG IT affordances and improve their competitive position in the dynamic e-commerce landscape (Ismagilova et al., 2021; Lo et al., 2022). In this aspect, affordance technologies (e.g., multifunctional bullet screens, immersive visual information, chat rooms) enable real-time interaction between live streamers and customers (Dincelli & Yayla, 2022; Wang et al., 2022). Through exploratory learning, this interactive feature allows MCNs to respond to customer queries and address customer needs promptly. A supportive and engaging environment can encourage customers to commit to larger purchases (Wang et al., 2022). Taken together, exploratory learning can assist MCNs to provide novel technological foundations that can deliver contemporary VMG IT affordances to their B2B customers (Lo et al., 2022; Volkoff & Strong, 2013). This delivery can significantly stimulate customers to complete their online transactions (Gregory et al., 2019; Sun et al., 2018). A positive purchase behavior can enhance MCNs' economic performance (Cavusgil & Zou, 1994; Sima et al., 2024).

H2b: Exploratory learning positively moderates the relationship between VMG IT affordances and MCNs' economic performance.

3.3.3.2. VMG IT affordances, exploitative learning and B2B performance

Organizational learning theorists denote exploitative learning as the process that focuses on existing competencies. This learning nature may limit MCN's ability to innovate and adapt (e.g., March, 1991; Santos-Vijande et al., 2012). Considering the fast-changing nature of the MCN industry (Mao et al., 2022),

technological innovation and customer engagement are of vital importance. Reliance on established approaches may prevent MCNs from exploring and integrating new solutions (i.e., VMG IT affordances) for service customers (Atuahene-Gima & Murray, 2007; Chung & Ho, 2021). Hence, we postulate the negative moderating role of exploitative learning in the VMG IT affordances-B2B performance framework.

Expressed differently, exploitative learning may inhibit MCNs in implementing VMG IT affordances effectively (Tippins & Sohi, 2003). For example, visibility affordance and meta-voicing affordance are proven to rely on novel visual cues and new meta-voicing ideas (Dong & Wang, 2018; Sun et al., 2018). The passive and status quo characteristics of exploitative learning may result in MCNs failing to deliver newly released VMG IT affordances to their B2B customers (Su et al., 2011). Moreover, Si (2021) reported that MCNs focusing on exploitative learning may neglect the emerging demand for customization services in the live streaming industry. This negligence prevents guidance shopping affordance from meeting their evolving needs (Li, 2021; Si, 2021). Consequently, the overall customer experience may suffer as they are unable to access innovative services (e.g., AI visibility affordance and bullet-screen meta-voicing affordance) or personalized interactions (i.e., guidance shopping affordance) that align with their expectations (Sun et al., 2019; Volkoff & Strong, 2017). Taken together, these barriers lead to diminished service quality and lower overall customer satisfaction (Morgan et al., 2004). As such, the channel performance can be harmed (Chung & Ho, 2021; Tippins & Sohi, 2003).

Furthermore, the B2B live streaming industry is driven by real-time interactions and communications (Liao et al., 2023). The effectiveness of the real-time communications directly influences channel performance metrics such as customer satisfaction, loyalty, and firm reputation (Chung et al., 2015; Sima et al., 2024). To enhance the quality of real-time communications, MCNs must adopt the latest technologies that facilitate efficient real-time interactions (Sadreddin & Chan, 2023). However, exploitative learning may hinder the MCN's ability to keep pace with these advanced techniques (Santos-Vijande et al., 2012; Yang et al., 2020). As a result, MCNs may not be able to provide real-time services and cutting-edge VMG IT affordances to their distributors (Dong & Wang, 2018; Sun et al., 2018). Such omissions in acquiring new knowledge may also turn away customers who seek novel visual support, feedback, and personalized service (i.e., VMG IT affordance strategies; Moon, 2020). These disadvantages may reduce the quality of service and impair the channel performance of MCNs

(e.g., reputation of firm, customer loyalty, and satisfaction of product/service offerings) (Chung et al., 2015; Morgan et al., 2004). Consequently, we propose that exploitative learning plays a negative role in the relationship between VMG IT affordances and channel performance.

H3a: Exploitative learning negatively moderates the relationship between VMG IT affordances and MCNs' channel performance.

The results of extant organizational learning research may also indicate that exploitative learning can negatively affect economic performance in general contexts (e.g., Chung et al., 2015; Hansen et al., 2019). The negative effects of exploitative learning on economic outcomes have also been noted in the e-commerce industry (e.g., Hua et al., 2024; Hughes et al., 2007). For example, Hughes et al. (2007) point out that exploitative learning impairs the market share and sales turnover in the e-commerce industry. Despite this, its specific impact on the VMG IT affordances-economic performance relationship has not been extensively examined. Thus, we hypothesize that exploitative learning negatively influences the relationship between VMG IT affordances and economic performance.

Explicitly, MCNs focusing on exploitative learning tend to ignore broad knowledge exchange processes and miss out on marketing opportunities (Atuahene-Gima & Murray, 2007; Collls, 1994). This oversight limits MCNs' ability to adapt to evolving customer needs (Atuahene-Gima & Murray, 2007). This shortfall negatively impacts MCNs' competitive advantage and reduces their economic performance (Kim & Wemmerlöv, 2015; Mahmoud et al., 2020). These disadvantages are consistent with extant research that reports exploitation weakens the search for novel knowledge and technologies (Atuahene-Gima & Murray, 2007). As the success of VMG IT affordance applications is reliant on keeping abreast of the latest IT techniques, MCNs that rely on exploitative learning may fail to capture novel knowledge exchange with live streaming platforms (Li, 2021; Wang et al., 2022). In addition, MCNs with exploitative learning patterns may also focus on their established VMG IT affordance approaches. This tendency may lead MCNs to neglect opportunities to obtain new technologies such as VR for visual cues (i.e., visibility affordance) and interactive chat rooms (i.e., guidance shopping affordance) (Dong et al., 2016). As such, exploitative learning may limit MCNs' ability to obtain novel knowledge that is available in the marketplace. Customers may become less likely to engage with MCNs due to their outdated or suboptimal technologies (Liao et al., 2023; Wongkitrungrueng & Assarut, 2020). Low

customer engagement may result in the reduction of sales purchases and lower repurchasing intentions (Ho & Chung, 2020; Hu & Chaudhry, 2020). As such, a reduced level of customer engagement often leads to fewer sales and diminishes economic performance in ROI, ROA, and profit growth. Consequently, the overall economic performance of MCNs may be negatively impacted by the integration of exploitative learning and VMG IT affordances (Morgan et al., 2004; Sheu & Hu, 2009).

H3b: Exploitative learning negatively moderates the relationship between VMG IT affordances and MCNs' economic performance.

3.3.4. VMG IT affordances, business networking and B2B performance

Research suggests that organizations can enhance their competitive advantage through extensive interactions with their external business networking institutions, such as principals, distributors, customers, and competitors (Jeong, 2016; Lee et al., 2001). These B2B interactions allow organizations to reallocate resources and capabilities more effectively (Zhang & Wu, 2017). Such interactive business networking supports strategic actions such as IT affordance strategies (Park & Luo, 2001). Existing studies have confirmed that effective business networking can lead to positive channel performance (Gensler et al., 2007) and increased financial revenue (i.e., economic performance) (Jeong, 2016; Lee et al., 2001). As such, we propose that by fostering strong business networking, MCNs can better implement VMG IT affordances, leading to enhanced channel performance and economic performance (Jeong, 2016; Lee et al., 2001).

Strong business networking can enable MCNs to communicate more effectively with business partners. This advantage facilitates frequent exchanges that lead to a better alignment of VMG IT affordances and enhanced channel performance (Lee et al., 2001; Zhang & Wu, 2017). This is because desirable business networking improves communication efficiency and information transparency among channel members, such as B2B customers and principals (Gregory et al., 2019). For example, frequent channel communications with B2B customers allow MCNs to access customer needs (Mao et al., 2022; Sheu & Hu, 2009). This can be used to generate additional and efficient value for tailor-made personal services (i.e., guidance shopping affordance) (Dong & Wang, 2018). By staying informed about current customer needs through business networking, MCNs can refine their live streaming content using VMG IT affordances to address their requirements. Such a process

can significantly improve customer satisfaction (Sun et al., 2021). This, in turn, can serve as a crucial metric for enhancing the channel performance of MCNs (Morgan et al., 2004). In addition, strong business networking with principals can help MCNs access more transparent information related to their product offerings (Mao et al., 2022; Zhu, 2004). Product transparency offers customers better, and more comprehensive, access to detailed product information. MCNs can employ it to deliver better service in relation to visual cues (i.e., visibility affordance) and offer timely responses to customer inquiries (i.e., meta-voicing affordance) (Dong et al., 2016; Mitrega et al., 2012). Improved service quality can lead to increased overall satisfaction, thereby further enhancing the channel performance of MCNs (Morgan et al., 2004; Verhoef et al., 2015). As such, strong business networking enables MCNs to effectively conduct their VMG IT affordance strategies, subsequently leading to higher customer satisfaction and superior channel performance (Chaker et al., 2022; Dong & Wang, 2018; Mao et al., 2022).

H4a: Business networking positively moderates the relationship between VMG IT affordances and MCNs' channel performance.

In addition to its role in facilitating the effect of business networking on channel performance, DC researchers also confirmed that business networking is essential for external knowledge acquirement, such as IT affordance related techniques (Lee et al., 2001; Zhang & Wu, 2017). Furthermore, extant studies, such as Lee et al. (2001) and others, report the influence of business networking on sharing external knowledge and its subsequent economic benefits (Burt & Soda, 2021; Mitrega et al., 2012). Based on these theoretical insights, we hypothesize that strong business networking can positively moderate the relationship between MCN's IT affordances and economic performance.

MCNs can obtain external intelligence from business networking, such as consumption trends (Li, 2021; TOPKLOUT, 2023). By collaborating with business partners, MCNs can gain information about the fashion cycle and popular trends. Such external knowledge allows MCNs to provide better guidance and customized services to customers, enhancing their ability to deliver guidance shopping affordances (Yan et al., 2023). Taking advantage of this, customers are more likely to impulsively engage in personalized (i.e., guidance shopping affordance) live streaming events (Lo et al., 2022). Furthermore, external knowledge regarding visual technologies (i.e., visibility affordance) and communication skills (i.e., meta-voicing affordance and guidance

shopping affordance) helps MCNs optimize the use of VMG IT affordances (Saffanah et al., 2023; Sun et al., 2018). As signaled by previous research, VMG IT affordances can promote customer engagement and positively influence purchasing behavior (e.g., Li et al., 2023; Sun et al., 2019). As such, effective business networking can facilitate external knowledge acquirement to enhance the operation of VMG IT affordances. This advantage can heighten customer engagement, strengthen connections with MCNs, and lead to increased repeat purchase intentions (Ho & Chung, 2020). Hence, by establishing effective business networking, MCNs can drive higher live streaming sales (e.g., Wang & Chung, 2020). An increase in sales volume can contribute to revenue growth, and increased ROI and ROA, and drive the overall economic performance of MCNs (Cavusgil & Zou, 1994). Taken together, strong business networking enables MCNs to successfully implement their VMG IT affordance strategies and achieve superior economic performance goals (Wang & Chung, 2020).

H4b: Business networking positively moderates the relationship between VMG IT affordances and MCNs' economic performance.

3.4. Research method

3.4.1. Data collection

Our study adopts a quantitative method to test hypotheses. This methodology is chosen because it allows for data collection from a large sample of MCNs, providing empirical insights into the relationships between VMG IT affordances, organizational learning, business networking, and B2B performance (Bell et al., 2018). Given that B2B live streaming is an emerging industry, the survey approach enables the collection of firm-level data to analyze the strategic impact of VMG IT affordances within the MCN industry. This method also facilitates the examination of interorganizational dynamics, allowing us to capture key mechanisms driving MCN B2B performance (Majchrzak et al., 2015).

The unit of analysis in this study is the MCN organization. MCNs were selected based on their active engagement in B2B live streaming and their intermediary role in facilitating transactions between upstream principals and downstream B2B customers (e.g., wholesalers, resellers, and retailers) (Liao et al., 2023). This focus allows for an organizational-level investigation into how MCNs leverage VMG IT affordances to enhance B2B performance. China's MCN market, comprising approximately 4,000 registered MCNs, provides an ideal

sampling frame for this study (iiMedia, 2022; Statista, 2023). The sampling frame of MCNs was obtained from credible databases such as Taobao Live Streaming Ecological Development Report, the State Administration of Radio MCN research report (SVA, 2020), the White Paper on the development of China's MCN industry (TOPKLOUT, 2023), and assessable backend data resources of Chinese live streaming platforms (i.e., TikTok, Taobao, and KWAI). These data sources have been used extensively in existing research and have a reputation for accuracy and comprehensiveness in providing continuous updating and accurate information on MCNs (Mao et al., 2022; TOPKLOUT, 2023). The databases include MCNs from all major regions of China, as well as varied types of MCNs (Bell et al., 2018). This allows our study to have a representation of MCNs in different regions and industrial sectors.

A random sampling frame method was used to select the MCNs in the study. This method helps to minimize selection bias and increase the representativeness of the sample (Bell et al., 2018; Liao et al., 2023). Given that there are around 4,000 MCNs in China, we have randomly selected 1,000 MCNs as our sampling frame (iiMedia, 2022). After selection, the sampling firms were contacted via email and WeChat. This study employs a dual-respondent survey design to mitigate any common method bias (Podsakoff et al., 2003). Specifically, the survey was to be completed by two senior staff members (Podsakoff et al., 2003). The first senior executive (e.g., CEOs, General Managers, Managing Directors) completed the profile/background information and independent variables questions (i.e., VMG IT affordances, organizational learning, and business networking). The second senior executive (e.g., CFOs, financial managers, marketing managers) were tasked to complete the dependent variables questions in terms of business performance (economic and channel performance). All questions are related to MCNs' current operations. As specified in the cover letter accompanying the questionnaire, the two respondents were explicitly instructed to provide both subjective assessments (e.g., perceptual measures) and business performance data within a single response.

Guided by extant literature, the survey was initially developed in English based on validated scales from previous research (Cavusgil & Zou 1994; Chung et al., 2015; Dong & Wang, 2018; Morgan et al., 2004; Sun et al., 2018). To ensure linguistic and conceptual accuracy, a back-to-back translation method was employed to develop the Chinese version (Lee & Chen, 2021; Sun et al., 2018). First, the English questionnaire was translated into Chinese by a bilingual expert with domain expertise in marketing and live streaming commerce.

Then, a second independent bilingual expert, who was unaware of the original English version, back-translated the questionnaire into English. The two English versions were compared, and discrepancies were resolved through discussions among researchers and translators to ensure conceptual equivalence. After completion, a pilot study was conducted where five marketing scholars and ten MCN managers were employed to validate the research items and offer feedback on wording, construction, readability, and so on (Lee & Chen, 2021). Based on their feedback, minor refinements were made to improve wording and ensure that the questionnaire was well-adapted to the MCN industry context.

This research used several tactics to increase the response rate. These included follow-up emails, recommendations from renowned industry leaders, and Q&A services pertaining to our findings (e.g., Chung & Kuo, 2018; Podsakoff et al., 2003). These efforts resulted in 255 responses from MCNs, of which 26 questionnaires were deemed unusable due to issues such as incomplete questionnaires, lack of responses from two senior staff within the MCN, or unreasonable actual performance data. Ultimately, 229 valid questionnaires were collected. The response rate is approximately 22.9%. This response is consistent with that found in the existing literature, which is sufficient for statistical analyses (Bell, 2018; Blunch, 2012). The data covers a wide range of industries, including beauty, groceries, beverages, apparel, electronics, education, banking, real estate, manufacturing, horticulture, medical products, skincare, videography, and online-to-offline (OTO) services. In line with earlier studies (Lee & Chen, 2021; Liao et al., 2023), our MCN respondents conducted B2B live streaming on social media platforms (e.g., RED and TikTok), e-commerce platforms (e.g., Taobao, PDD, and JD) and online B2B trading platforms (e.g., 1688.com).

3.4.2. Measurement scales

The research measurements were developed in accordance with the guidelines of existing literature (e.g., Cavusgil & Zou 1994; Chung et al., 2015; Dong & Wang, 2018; Morgan et al., 2004; Sun et al., 2018). All research variable items have been validated by previous studies and demonstrate high reliability and validity. Our measurement scales show a strong reliability and validity, as demonstrated below. Details concerning the measurement scales are listed in Table 3.2.

VMG IT affordances: Consistent with the extant literature, VMG IT affordance measurement items are measured by visibility affordance, meta-voicing affordance, and guidance shopping affordance (Dong & Wang, 2018; Saffanah et al., 2023; Sun et al., 2018). VMG IT affordances are measured by a seven-point Likert scale (1=strongly disagree; 7=strongly agree).

Business performance – channel performance and economic performance: The study adopts two forms of performance measurement scales, including a self-evaluation seven-point Likert scale (1=not satisfied at all; 7=completely satisfied) and a comparison seven-point Likert scale (1=much worse; 7=much better as compared to main competitors), as a comparison to the main direct competitors (Morgan et al., 2004). Channel performance is measured by the quality of the relationship between MCNs and distributors, reputation of the firm, distributor loyalty, and overall product/service satisfaction (Morgan et al., 2004; Sima et al., 2024). Economic performance is measured by both perceptual data and actual transaction data (Cavusgil & Zou, 1994; Morgan et al., 2004). The perceptual data is measured by ROI, ROA, sales volume, and profit growth over three years (Morgan et al., 2004). The actual economic performance data includes annual sales growth and market share (Cavusgil & Zou, 1994). This multiple-item approach allows us to obtain better objective results (Bell et al., 2018; Bello & Gilliland, 1997; Cavusgil & Zou, 1994).

Organizational learning and business networking: In accordance with the guidance of existing research (Atuahene-Gima & Murray, 2007; Chung et al., 2015), our study adopts a seven-point Likert scale to measure exploratory learning and exploitative learning (1=strongly disagree; 7=strongly agree) (Table 3.2). Business networking is measured by evaluating senior managers' relationships with principals, manufacturers, distributors, competitors, and other key firms in the MCN industry (1=very little; 7=very extensive) (Mitrega et al., 2012; Wang & Chung, 2020).

Control variable: This study employs eight control variables, including firm size, year of MCN experience, industry type, current industry size, platform regulatory constraints, customer preference, technology breakthroughs, and extent of competition in the industry. Previous research has supported the role of firm size in the business performance of organizations. This can be measured by the number of employees (Uhlaner et al., 2013; Weinzimmer et al., 2023). Existing research also confirms the effect of years of experience on business performance (Wood, 2006). Moreover, the industry sector is divided into product (coded as 1) and non-product

(i.e., service and consulting) (coded as 0) categories (Li, 2021; TOPKLOUT, 2023). The industry size is related to the size of the MCN industry (1=small; 7=large). In addition, because live streaming platforms continue to introduce new laws and regulations, this study evaluates the regulatory constraints in the platforms by a 7-point scale (1=strongly disagree; 7=strongly agree) (Si, 2021; TOPKLOUT, 2023). Likewise, previous research suggests that customer preference changes, technology breakthroughs, and cutthroat competition are key external factors that may influence business performance (1=strongly disagree; 7=strongly agree) (Schilke, 2014). Specifically, customer preference changes impact MCNs' engagement and conversions, requiring adaptation of content strategies and VMG IT affordances. Technology breakthroughs influence how MCNs utilize VMG IT affordances to enhance efficiency and competitiveness. Cutthroat competition heightens market pressures. These controls account for external factors that may influence MCN business outcomes, ensuring a precise analysis of VMG IT affordances, organizational learning, and business networking on B2B performance (Chen et al., 2019; Morgan et al., 2004).

3.4.3. Common method bias assessment

Common method bias (CMB) is a critical methodological issue in B2B marketing research because it can significantly impact the objectivity of results (Chung et al., 2016). This research employs the double-respondent survey methodology to reduce CMB issues and improve the accuracy of collected data (Chung & Kuo, 2018; Hair et al., 2015). This research also integrates two scales of measurement items, including a self-evaluation seven-point Likert scale and a comparison seven-point Likert scale for performance data. This research technique can enhance the robustness and reliability of the results (Bell et al., 2018). The measurement of economic performance also combines perceptual data (i.e., ROI, ROA, sales volume, and profit growth) and actual data (i.e., annual sales growth and market share). This combination also improves construct reliability and reduces the impact of CMB in our research (Cavusgil & Zou, 1994; Knight & Cavusgil, 2004).

3.4.4. Reliability and validity

The study analyses the validity and reliability using IBM AMOS 28.0 and SPSS Statistics 26.0 software. The relationship between the hypotheses and the structural model is initially evaluated by AMOS statistical analysis (Chung et al., 2015; Wang & Chung, 2020). The output results of the conceptual framework suggest a desirable

fit of the framework: χ^2/df=1.511, NFI=0.914, IFI=0.969, TLI=0.940, CFI=0.968, and RMSEA=0.049 ($p < 0.01$) (Blunch, 2012).

Our research further confirms the validity and reliability of the constructs using Confirmatory Factor Analysis (CFA) in IBM SPSS Statistics software (Blunch, 2012). CFA provides evidence of the fit of the structural framework, enabling the evaluation of the proposed hypotheses and the correlations among the measurement constructs (Table 3.1) (Blunch, 2012). The reliability of the constructs can be evaluated by Cronbach's Alpha, factor loading, and all variance-inflating factor (VIF) values. Cronbach's Alpha and the factor loadings in our study are all higher than 0.7, as shown in Table 3.3. All variance-inflating factor (VIF) values are less than 4.0, as outlined in the next section (Blunch, 2012; Chung et al., 2015). These values are within the proposed thresholds, suggesting strong validity and reliability of the constructs in our study. Our composite reliability (CR) values are higher than 0.7 and the average variance extracted (AVE) values are better than 0.5 (Hair et al., 2014; Hair et al., 2015). Taken together, high validity and reliability are confirmed in this study. Our research's correlation coefficient matrix as well as the reliability and validity assessments of all measurements are reported in Table 3.1 and Table 3.2.

TABLE 3.1: CORRELATION COEFFICIENTS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Year of MCN experience	1.000																	
2. Industry type	-.110*	1.000																
3. Current industry size	.008	-.111*	1.000															
4. Platform regulatory constraints	-.230**	.018	.192*	1.000														
5. Customer preference	-.056	-.082	.289**	.305**	1.000													
6. Technology breakthroughs	.055	.058	.231**	.060	.332**	1.000												
7. Cutthroat competition	.078	-.033	.313**	.158**	.263**	.564**	1.000											
8. Firm size	.000	-.044	.166**	.123*	.182**	.114*	.173**	1.000										
9. Business networking	-.005	.037	.160**	.200**	.071	.010	-.021	.144*	1.000									
10. Exploratory learning	-.140**	-.039	.421**	.237**	.153**	.119*	.237**	.214**	.328**	1.000								
11. Exploitative learning	.132**	-.114*	.352**	.128*	.251**	.161**	.289**	.083	.231**	.310**	1.000							
12. VMG IT affordance strategy	-.139**	.073	.236**	.149**	.286**	.313*	.259**	.219**	.080	.195**	.146**	1.000						
13. Channel Performance - CPa	.048	-.038	.016	.118*	.088	-.070	-.085	.038	.306**	.114*	.115*	.039	1.000					
14. Channel Performance - CPb	.000	.014	.208**	.111*	.034	.011	.068	.143**	.328**	.270**	.135**	.115*	.454**	1.000				
15. Economic Performance - EPa	.108*	-.015	-.023	.036	-.008	-.073	-.166**	.095*	.331**	.069	.047	.029	.432**	.380**	1.000			
16. Economic Performance - EPb	.078	-.020	.013	.095	.023	-.067	-.175**	.083	.346**	.106*	.051	.022	.471**	.370**	.553**	1.000		
17. Economic Performance – sales growth	-.046	.164**	.081	.053	-.140*	.264**	.208**	.117**	-.038	.049	-.002	.305**	.090	.166**	.131*	.124**	1.000	
18. Economic Performance - market share	-.006	.120*	.110*	-.003	.098*	.050	.011	.217**	.052	104*	-.065	.186**	.087	.170**	.141**	.188**	.227**	1.000

Notes: *p < 0.05; **p < 0.01; CPa = channel performance internally oriented scale; CPb = channel performance competitor-centered scale; EPa = economic performance internally oriented scale; EPb = economic performance competitor-centered scale;

TABLE 3.2: CONSTRUCT'S INFORMATION

	Chinese MCN enterprises (N = 229)				
Model Constructs	Mean Values	Factor Loading	Cronbach's Alpha	CR	AVE
Business Networking[a]			0.88	0.89	0.55
Senior managers at buyer firms	5.22	0.724			
Senior managers at supplier firms	5.38	0.708			
Senior managers at distributor firms (e. g., supply chain firms)	5.06	0.762			
Senior managers at competitor firms	4.44	0.812			
Senior managers at data analysis firms	4.53	0.731			
Senior managers at social media platform firms	4.96	0.727			
Senior managers at head-hunter firms (for influencers)	4.61	0.704			
Senior managers of other key firms (i.e., other than the above) within your industry	4.48	0.838			
Exploratory Learning[b]			0.87	0.87	0.58
In information search, we focus on acquiring knowledge of product/service strategies that involved experimentation and high market risks	5.58	0.801			
We prefer to collect information with no identifiable strategic market needs to ensure experimentation in the new product/service development	5.28	0.806			
Our aim is to acquire knowledge to develop a product/service that led us into new areas of learning such as new markets and technological experience	5.53	0.845			
We collect novel information and ideas that went beyond our current market and technological experience	5.31	0.821			
Our aim is to collect new information that forced us to learn new things in the new product/service development	5.57	0.776			

(continue)

Exploitative Learning[b]			0.92	0.89	0.97
Our aim is to search for information to refine common methods and ideas in solving problem in the new product/service development	4.83	0.841			
Our aim is to search for ideas and information that we can implement well to ensure productivity rather than those ideas that could lead implementation mistakes in the product/service development and in the marketplace We search for the usual and generally proven methods and solutions to new product/service development problems	4.62	0.867			
We search for the usual and generally proven methods and solutions to new product/service development problems We use information acquisition methods (e. g., survey of customers and competitors) that helped us understand and update the firm's current product/service and market experiences	4.86	0.903			
We use information acquisition methods (e. g., survey of customers and competitors) that helped us understand and update the firm's current product/service and market experiences	4.87	0.896			
We emphasize the use of knowledge related to our existing product/service experience	4.73	0.863			
VMG IT Affordance strategy[b]			0.96	0.96	0.97
Visibility Affordance			0.96	0.97	0.89
We demonstrate detailed pictures of the products on live streaming	5.70	0.879			
We utilize live streaming to make the product attributes visible to viewers	5.64	0.896			
We utilize live streaming to make information about how to use products visible to viewers	5.63	0.886			
We utilize live streaming to visualize products like in the real world	5.66	0.869			
Meta-voicing Affordance			0.97	0.94	0.76
We utilize live streaming to allow viewers to comment on products	5.64	0.909			
We utilize live streaming to allow viewers to react to streamers' feedback	5.60	0.920			
We utilize live streaming to allow viewers to share in streamers' opinions	5.61	0.877			
We utilize live streaming to allow viewers to join in streamers' communal discussions	5.55	0.908			
We utilize live streaming to allow viewers to share shopping experiences with streamers	5.45	0.899			

(continue)

Guidance Shopping Affordance			0.92	0.76	0.50
Our streamers provide information on all alternative products they intend to buy	5.39	0.726			
Our streamers help viewers establish their product needs without any restrictions	5.41	0.900			
Our streamers help viewers identify which product attributes best fit their needs	5.42	0.775			
Our streamers provide personal product customization based on requirements	5.26	0.769			
Channel Performance					
CPa - Group one[d]: rate the self-satisfaction concerning the firm's operation in the industry			0.75	0.72	0.52
Quality of your firm's relationship with distributors	5.07	0.857			
Reputation of your firm	5.07	0.859			
Distributor loyalty to your firm	4.97	0.880			
Overall satisfaction with your total product/service offering	5.29	0.865			
CPb - Group two[e]: rate the performance, as compared to the main competitors in the industry			0.88	0.87	0.62
Quality of your firm's relationship with distributors	5.02	0.852			
Reputation of your firm	5.30	0.848			
Distributor loyalty to your firm	5.12	0.891			
Overall satisfaction with your total product/service offering	5.33	0.835			
Economic Performance - Perceptual					
EPa - Group one[d]: rate the self-satisfaction concerning the firm's operation in the industry			0.75	0.72	0.52
Sales volume	5.28	0.722			
ROI	5.02	0.807			
ROA	4.72	0.807			
Profit growth	5.26	0.739			

(continue)

EPa - Group one[d]: rate the self-satisfaction concerning the firm's operation in the industry			0.75	0.72	0.52
Sales volume	5.28	0.722			
ROI	5.02	0.807			
ROA	4.72	0.807			
Profit growth	5.26	0.739			
EPb - Group two[e]: rate the performance, as compared to the main competitors in the industry			0.90	0.89	0.67
Sales volume	4.93	0.836			
ROI	4.76	0.882			
ROA	4.79	0.904			
Profit growth	4.90	0.854			
Economic Performance - Actual					
Your firm's sales growth in the industry - Actual	18.66%				
Your firm's approximate market share in the industry - Actual	13.73%				

Notes: [a]measured by seven-point scale (1=Very little; 7=Very extensive); [b]measured by seven-point scale (1= Strongly disagree; 7= Strongly agree); [c]measured by seven-point scale (1=Not achieved at all; 7=Completely achieved); [d]measured by seven-point scale (1=Not satisfied at all; 7=Completely satisfied); [e]measured by seven-point scale (1= Much worse; 7=Much better).

3.4.5. Endogeneity tests

Although VMG IT affordances are proposed as exogenous variables influencing MCN performance in the B2B live streaming context, concerns about endogeneity may arise due to potential issues, such as omitted variable bias or measurement errors (Jean et al., 2016; Zaefarian et al., 2017). As recommended by Jia et al. (2020), an instrumental variable (IV) approach is a widely used method in marketing research to address potential endogeneity. For this study, an appropriate IV was selected based on its ability to influence VMG IT affordances adoption without directly impacting MCN performance. To solve the endogenous problem, we employed the IV method by introducing one variable: firm digital maturity (i.e., the extent to which an MCN has adopted digital tools and VMG IT infrastructure). Firm digital maturity (measured on a scale of 1=strongly disagree; 7=strongly agree) meets the two requirements of a valid IV. First, firm digital maturity is correlated with VMG IT affordances (Kannan, 2017; Sun et al., 2025). Second, digital maturity itself does not directly impact MCN performance but rather influences it indirectly through VMG IT affordances (Erdey et al., 2024; Yan et al., 2023). This ensures that the IV is not correlated with the error term in the model, preventing bias in the estimated relationships (Bascle, 2008; Hult et al., 2018). To test for endogeneity, this study employs a two-stage least squares (2SLS) regression technique (Jia et al., 2020). As reported in Appendix E, the results from this analysis confirm that endogeneity does not significantly affect the model, validating the robustness of our findings.

3.5. Results

Hierarchical regression analysis is used to test our research hypotheses (Blunch, 2012). A mean-centered method was employed to reduce the influence of multicollinearity, thereby increasing the accuracy of the results (Blunch, 2012; Chung & Kuo, 2018). The regression analysis results are listed in Table 3.3 to Table 3.8. Regression analysis Model 1 was designed to contain eight control variables. Model 2 added moderators and independent variables, including business networking, organizational learning, and VMG IT affordance constructs. Model 3 added the interaction values of VMG IT affordances and each organizational resource. The dependent variables in our study include channel performance and economic performance, as explained above.

3.5.1. Results of channel performance

The results concerning channel performance are listed in Table 3.3 (self-evaluation channel performance) and Table 3.4 (competitor-centered channel performance). Our results show that all VIF values are less than 4.0, indicating that multicollinearity is not a concern in our study (Blunch, 2012; Chung & Kuo, 2018). VMG IT affordances are suggested to have a positive effect on channel performance (β=0.154, p<0.05; β=0.149, p<0.05). These results support H1a. More, the regression results confirm the moderating role of organizational learning and business networking. Particularly, exploratory learning is revealed to have a positive and significant effect in the relationship between the VMG IT affordances and channel performance of MCNs (β=0.218, p<0.01; β=0.207, p<0.05). This outcome indicates that H2a is supported. Moreover, the positive moderation effect of business networking in the VMG IT affordances and channel performance of MCNs is also confirmed (β=0.152, p<0.05; β=0.215, p<0.01). This finding confirms H4a. In line with our hypotheses, the negative moderating effect of exploitative learning in the VMG IT affordance and channel performance framework is confirmed (β=-0.221, p<0.01; β=-0.299, p<0.001). This result suggests that H3a is also supported.

TABLE 3.3: REGRESSION RESULTS OF CHANNEL PERFORMANCE – INTERNALLY ORIENTED SCALE

	Channel performance – internally oriented scale					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	0.131 #	1.095	0.107	1.210	0.118 #	1.277
Industry type	-0.089	1.109	-0.126 #	1.160	-0.107 #	1.176
Current industry size	-0.031	1.284	-0.131	1.785	-0.150 #	1.818
Platform regulatory constraints	0.145 *	1.251	0.032	1.388	0.028	1.412
Customer preference	0.148 #	1.467	0.131 #	1.598	0.108	1.621
Technology breakthroughs	-0.110	1.865	-0.156 #	1.930	-0.164 *	1.949
Cutthroat competition	-0.130	1.918	-0.052	2.128	-0.058	2.162
Firm size	-0.053	1.053	0.032	1.098	-0.031	1.098
Independent variables						
Exploratory learning			-0.002	1.765	-0.019	1.789
Exploitative learning			-0.036	1.660	-0.029	1.707
Business networking			0.375 **	1.421	0.365	1.528
VMG IT affordance strategy (H1a, S)			0.154 *	1.333	0.187 **	1.551
Interactions						
VMG IT affordance strategy × Exploratory learning (H2a, S)					0.218 **	2.075
VMG IT affordance strategy × Exploitative learning (H3a, S)					-0.221 **	2.039
VMG IT affordance strategy × Business networking (H4a, S)					0.152 *	1.290
R^2 value	0.091 **		0.235 **		0.293 **	
Adjusted R^2 value	0.058 **		0.192 **		0.243 **	
R^2 value change	0.091 **		0.144 **		0.058 **	
F value	2.732 **		5.499 **		5.862 **	

Notes: All beta values are standardized. # p < 0.1. * p < 0.05. ** p < 0.01. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

TABLE 3.4: REGRESSION RESULTS OF CHANNEL PERFORMANCE – COMPETITOR-CENTERED SCALE

	Channel performance – competitor-centered scale					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	0.062	1.095	0.056	1.210	0.068	1.277
Industry type	-0.028	1.109	-0.072	1.160	-0.055	1.176
Current industry size	0.270 **	1.284	0.110	1.785	0.078	1.818
Platform regulatory constraints	0.064	1.251	-0.069	1.388	-0.065	1.412
Customer preference	-0.035	1.467	-0.026	1.598	-0.048	1.621
Technology breakthroughs	-0.120	1.865	-0.158 #	1.930	-0.172 *	1.949
Cutthroat competition	0.056	1.918	0.122	2.128	0.104	2.162
Firm size	-0.045	1.053	-0.039	1.098	-0.039	1.098
Independent variables						
Exploratory learning			0.170 *	1.765	0.153	1.789
Exploitative learning			-0.084	1.660	-0.071 *	1.707
Business networking			0.325 **	1.421	0.326 **	1.528
VMG IT affordance strategy (H1a, S)			0.149 *	1.333	0.223 **	1.551
Interactions						
VMG IT affordance strategy × Exploratory learning (H2a, S)					0.207 *	2.075
VMG IT affordance strategy × Exploitative learning (H3a, S)					-0.303 **	2.039
VMG IT affordance strategy × Business networking (H4a, S)					0.220 **	1.290
R^2 value	0.088 **		0.242 **		0.343 **	
Adjusted R^2 value	0.055 **		0.200 **		0.296 **	
R^2 value change	0.088 **		0.154 **		0.101 **	
F value	2.649 **		5.724 **		7.376 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

3.5.2. Results of economic performance

The economic performance results of the study consist of both perceptual data and actual data (Butler et al., 2012; Cavusgil & Zou, 1994; Sydney-Hilton & Vila-Lopez, 2019). The perceptual self-evaluated economic performance construct consists of sales volume, ROI, ROA, and profit growth (Table 3.5), while a competitor-centered scale economic performance is listed in Table 3.6 (Katsikeas et al., 2000; Klink et al., 2021; Morgan et al., 2004). The actual data is evaluated by annual sales growth and market share (Bhattacharya et al., 2022; Cavusgil & Zou, 1994). The actual economic performance results are shown in Tables 3.7 and 3.8. VMG IT affordances are revealed to positively influence the economic performance of MCNs concerning the results of all economic performance indicators (self-evaluated: $\beta=0.172$, $p<0.01$; competitor-centered: $\beta=0.139$; $p<0.05$; sales growth: $\beta=0.306$, $p<0.001$; market share: $\beta=0.208$, $p<0.01$). These results support H1b. Further, the interactive effect of exploratory learning and VMG IT affordance strategy has a positive and significant effect on all economic performance metrics (self-evaluated: $\beta=0.168$, $p<0.05$; competitor-centered: $\beta=0.183$, $p<0.05$; sales growth: $\beta=0.209$, $p<0.05$; market share: $\beta=0.214$, $p<0.05$). These results support H2b. Likewise, the interaction of business networking and VMG IT affordance strategy is proven to positively influence the economic performance of MCNs (self-evaluated: $\beta=0.132$, $p<0.05$; competitor-centered: $\beta=0.148$, $p<0.05$; sales growth: $\beta=0.145$, $p<0.05$; market share: $\beta=0.141$, $p<0.05$). These results also suggest that H4b is supported in all forms of economic performance measurements. As expected, the integrative effect of exploitative learning and VMG IT affordance strategy is confirmed to have a negative and significant influence on all economic performance metrics (self-evaluated: $\beta=-0.230$, $p<0.01$; competitor-centered: $\beta=-0.285$, $p<0.001$; sales growth: $\beta=-0.399$, $p<0.001$; market share: $\beta=-0.260$, $p<0.01$). These results suggest that H3b is also supported.

TABLE 3.5: REGRESSION RESULTS OF ECONOMIC PERFORMANCE – PERCEPTUAL INTERNALLY ORIENTED SCALE

	Economic performance - perceptual data - internally oriented scale					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	0.150 *	1.095	0.131 *	1.210	0.135 *	1.277
Industry type	-0.072	1.109	-0.124 *	1.160	-0.111 #	1.176
Current industry size	-0.060	1.284	-0.159 *	1.785	-0.178 *	1.818
Platform regulatory constraints	0.127 #	1.251	-0.017	1.388	-0.018	1.412
Customer preference	0.027	1.467	0.026	1.598	0.011	1.621
Technology breakthroughs	0.031	1.865	-0.029	1.930	-0.036	1.949
Cutthroat competition	-0.286 **	1.918	-0.167 *	2.128	-0.175 *	2.162
Firm size	-0.034	1.053	-0.013	1.098	-0.013	1.098
Independent variables						
Exploratory learning			0.010	1.765	-0.005	1.789
Exploitative learning			-0.131 #	1.660	-0.119 #	1.707
Business networking			0.466 **	1.421	0.466 **	1.528
VMG IT affordance strategy (H1b, S)			0.172 **	1.333	0.215 **	1.551
Interactions						
VMG IT affordance strategy × Exploratory learning (H2b, S)					0.168 *	2.075
VMG IT affordance strategy × Exploitative learning (H3b, S)					-0.230 **	2.039
VMG IT affordance strategy × Business networking (H4b, S)					0.132 *	1.290
R^2 value	0.101 **		0.312 **		0.361 **	
Adjusted R^2 value	0.068 **		0.274 **		0.315 **	
R^2 value change	0.101 **		0.212 **		0.048 **	
F value	3.064 **		8.137 **		7.971 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

TABLE 3.6: REGRESSION RESULTS OF ECONOMIC PERFORMANCE – PERCEPTUAL COMPETITOR-CENTERED SCALE

	Economic performance - perceptual data - competitor-centered scale					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	-0.199 **	1.095	0.183 **	1.210	0.183 **	1.277
Industry type	-0.054	1.109	-0.098	1.160	-0.084	1.176
Current industry size	0.085	1.284	-0.009	1.785	-0.031	1.818
Platform regulatory constraints	0.205 **	1.251	0.081	1.388	0.081	1.412
Customer preference	0.038	1.467	0.041	1.598	0.026	1.621
Technology breakthroughs	0.060	1.865	0.012	1.930	0.005	1.949
Cutthroat competition	-0.354 **	1.918	-0.257 **	2.128	-0.267 **	2.162
Firm size	-0.136 *	1.053	-0.119 *	1.098	-0.119 *	1.098
Independent variables						
Exploratory learning			0.031 **	1.765	0.014	1.789
Exploitative learning			-0.108	1.660	-0.090	1.707
Business networking			0.388 *	1.421	0.392 **	1.528
VMG IT affordance strategy (H1b, S)			0.139 *	1.333	0.195 **	1.551
Interactions						
VMG IT affordance strategy × Exploratory learning (H2b, S)					0.183 *	2.075
VMG IT affordance strategy × Exploitative learning (H3b, S)					-0.285 *	2.039
VMG IT affordance strategy × Business networking (H4b, S)					0.148 **	1.290
R^2 value	0.155 **		0.305 **		0.372 **	
Adjusted R^2 value	0.124 **		0.266 **		0.328 **	
R^2 value change	0.155 **		0.150 **		0.068 **	
F value	5.020 **		7.853 **		8.384 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

TABLE 3.7: REGRESSION RESULTS OF ECONOMIC PERFORMANCE – ANNUAL SALES GROWTH

	Economic performance - actual sales growth					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	-0.176 **	1.097	-0.077	1.212	-0.089	1.282
Industry type	0.161	1.106	0.083	1.161	0.098 *	1.179
Current industry size	-0.143	1.274	-0.125	1.770	-0.151	1.803
Platform regulatory constraints	0.058	1.246	0.025	1.383	0.025	1.407
Customer preference	0.115	1.458	0.113	1.589	0.104	1.614
Technology breakthroughs	0.030	1.864	-0.047	1.930	-0.050 *	1.948
Cutthroat competition	0.154 #	1.912	0.208 *	2.130	0.196	2.165
Firm size	-0.051	1.053	-0.107 #	1.098	-0.108 #	1.098
Independent variables						
Exploratory learning			0.086	1.751	0.062	1.775
Exploitative learning			-0.284 **	1.668	-0.249 **	1.713
Business networking			-0.005	1.421	0.016 **	1.533
VMG IT affordance strategy (H1b, S)			0.306 **	1.333	0.380 **	1.550
Interactions						
VMG IT affordance strategy × Exploratory learning (H2b, S)					0.209 *	2.078
VMG IT affordance strategy × Exploitative learning (H3b, S)					-0.399 **	2.039
VMG IT affordance strategy × Business networking (H4b, S)					0.145 *	1.298
R^2 value	0.121 **		0.238 **		0.348 **	
Adjusted R^2 value	0.089 **		0.195 **		0.302 **	
R^2 value change	0.121 **		0.117 **		0.110 **	
F value	3.768 **		5.575 **		7.506 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

TABLE 3.8: REGRESSION RESULTS OF ECONOMIC PERFORMANCE – MARKET SHARE

	Economic performance - actual market share					
	M1 β	VIF	M2 β	VIF	M3 β	VIF
Control variables						
Year of MCN experience	-0.005	1.095	0.076	1.210	0.080	1.277
Industry type	0.212 **	1.109	0.140*	1.160	0.158 *	1.176
Current industry size	0.124 #	1.284	0.055	1.785	0.036	1.818
Platform regulatory constraints	-0.002	1.251	-0.086	1.388	-0.090	1.412
Customer preference	0.021	1.467	0.063	1.589	0.044	1.621
Technology breakthroughs	-0.016	1.865	-0.059	1.930	-0.075	1.949
Cutthroat competition	-0.219 *	1.918	-0.156 #	2.128	-0.162 #	2.162
Firm size	0.028	1.053	-0.020	1.098	-0.020	1.098
Independent variables						
Exploratory learning			0.260 **	1.765	0.241 **	1.789
Exploitative learning			-0.317 **	1.660	-0.303 **	1.707
Business networking			0.066	1.421	0.066	1.528
VMG IT affordance strategy (H1b, S)			0.208 **	1.333	0.248 **	1.551
Interactions						
VMG IT affordance strategy × Exploratory learning (H2b, S)					0.214 *	2.075
VMG IT affordance strategy × Exploitative learning (H3b, S)					-0.260 **	2.039
VMG IT affordance strategy × Business networking (H4b, S)					0.141 *	1.290
R^2 value	0.082 **		0.205 **		0.267 **	
Adjusted R^2 value	0.048 **		0.161 **		0.215 **	
R^2 value change	0.082 **		0.123 **		0.062 **	
F value	2.430 **		4.619 **		5.140 **	

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

3.6. Discussion and research implications

Our study advances the theoretical development of DC theory, organizational learning theory, and organizational networking theory. Our research offers valuable contributions to research on MCNs, VMG IT affordances, and B2B performance. Our study is among early research to reveal the significant and positive impact of IT affordances on the B2B channel and economic performance of MCNs. Our results also pioneeringly provide strong evidence for the positive contingent effect of exploratory learning in the VMG IT affordances-B2B performance dyad. The positive interactive effect of business networking and VMG IT affordances on MCNs' B2B performance is also revealed. On the contrary, our results suggest that the integration of exploitative learning and VMG IT affordances has a negative effect on MCNs' B2B performance. As such, the findings of this research show the effect of VMG IT affordances on B2B performance is important. Furthermore, our study is among early research to integrate the theoretical foundations of DC theory (Santos-Vijande et al., 2012; Teece et al., 1997), organizational learning theory (March, 1991; Zahra et al., 2006), and organizational networking theory (Burt & Soda, 2021; Mitrega, et al., 2012), alongside the conceptualization of VMG IT affordance and B2B performance (Volkoff & Strong, 2013), in the formulation of a research framework. By conceptualizing VMG IT affordances as the DC of MCNs and investigating their interaction with organizational learning and business networking, our study provides novel insights into the VMG IT affordances-B2B performance framework. Specifically, our findings reveal how organizational learning and business networking influence the relationship between VMG IT affordances and B2B performance in the MCN industry. Additionally, this study provides actionable managerial implications for MCNs on how to strategically align VMG IT affordances with managerial mechanisms (i.e., organizational learning and business networking) to achieve sustainable performance outcomes in highly dynamic industries (e.g., Cavusgil & Zou, 1994; Dong et al., 2016).

3.6.1. Theoretical implications

Our research makes several theoretical contributions to the literature on IT affordances, DC theory, organizational learning theory, and organizational networking theory, as well as to the understanding of MCNs' B2B performance. First, our study advances the conceptualization of VMG IT affordances within the context of B2B live streaming and MCN operations. We reveal the significant and positive impact of VMG IT affordances,

such as visibility, meta-voicing, and guidance shopping, on channel and economic performance. Unlike prior research that has predominantly focused on VMG IT affordances in B2C settings (e.g., Dong & Wang, 2018; Moon, 2020), our findings demonstrate the relevance of IT affordances in the B2B context. This expands the theoretical scope of IT affordances from B2C to B2B live streaming research (Liao et al., 2023; Wang et al., 2022; Mao et al., 2022). Based on our results and those revealed in the literature, researchers can now consider using VMG IT affordance in B2C research such as that concerning user engagements, consumer purchase intentions, and repurchase intention, as well as B2B research that is outlined in our research conceptualization (VMG IT affordances and MCNs B2B performance) (e.g., Dong & Wang, 2018; Hua et al., 2024).

Second, our study contributes to the development of DC theory by illustrating how VMG IT affordances, organizational learning, and business networking interact to drive B2B performance. By positioning VMG IT affordances as DC, we demonstrate their role in enabling MCNs to transform operations in order to adapt to dynamic market conditions (D'Ambra et al., 2022; Teece et al., 1997). This perspective extends the understanding of how MCNs leverage VMG IT affordances, not as static interface characteristics, but as DC that evolve in response to environmental changes. Our findings emphasize the importance of internal and external managerial perspectives, such as exploratory learning, exploitative learning, and business networking, in amplifying the effectiveness of VMG IT affordances. This integrative aspect advances the theoretical understanding of how MCNs navigate complex business environments to achieve sustainable performance outcomes (Mitrega et al., 2012; Santos-Vijande et al., 2012). In light of our results and those reported in the literature, research may now consider DC theory with other complementary theoretical frameworks to further explore strategic management, customer value creation, and the development of born-digital and technology-driven ventures, as outlined in our study (Lee et al., 2001; Martelo et al., 2013; Sadreddin & Chan, 2023).

Third, our findings may also advance the theoretical development of organizational learning theory (Chung et al., 2015; March, 1991). Our study is among the pioneering groups that have shown the different roles of exploratory learning and exploitative learning in the VMG IT affordance-B2B performance dyad. The former learning is suggested to have a positive, while the latter is confirmed to have a negative, contingent effect. As such, research concerning DC theory and organizational learning theory can now consider the role of

organizational learning in social ties and competitive strategies, as well as MCN and B2B research (Barney, 1991; March, 1991).

Fourth, our study is also among the forefront of research to uncover the role of business networking in the VMG IT affordance-B2B performance framework. By building on DC research (Do et al., 2022; Santos-Vijande et al., 2012), the outcome of our study contributes to the theoretical development of DC by highlighting the positive contingent role of business networking in the VMG IT affordances-B2B performance conceptualization. Consequently, research concerning the DC view can now consider employing business networking in the investigation of organizational resilience, innovation, B2B dark side operations, as well as those aspects outlined in this study (VMG IT affordance, MCNs, and B2B performance) (Chung et al., 2016; Do et al., 2022). Taken together, our findings contribute to the theoretical development of these key frameworks by addressing whether the integration of organizational learning and business networking with VMG IT affordance strategies enhances B2B performance in dynamic markets. By embedding these interactive mechanisms within a B2B live streaming ecosystem, our study bridges critical gaps in the literature, particularly in the underexplored context of MCNs and B2B live streaming.

Last, although our empirical focus is on MCNs operating within the B2B live streaming ecosystem, the theoretical insights developed regarding VMG IT affordances extend beyond this specific context. We conceptualize VMG IT affordances as digitally enabled dynamic capabilities, such as visibility, meta-voicing, and guided shopping support, that can be enacted across a variety of B2B digital marketing environments (Faraj & Azad, 2012; Volkoff & Strong, 2013). For example, in industrial digital platforms, visibility affordances enable suppliers to provide real-time inventory and production data to business buyers, enhancing transparency and transactional trust (Elia et al., 2021; He & Zhang, 2022). Meta-voicing tools facilitate customer participation and feedback loops in co-developing marketing content or digital services (Majchrzak & Markus, 2013). Similarly, in B2B online professional service marketing, guidance shopping affordances help B2B customers navigate complex solution portfolios and configure offerings to match their specific requirements (Sun et al., 2018). These digital B2B examples underscore the broader theoretical applicability of our framework. Moreover, this study shows that, when VMG IT affordances are combined with exploratory learning and business networking, they help firms stay flexible and perform better in B2B digital marketing. These findings

can also be applied to other business settings that rely on digital technologies (He & Zhang, 2022). Consequently, this research contributes to the broader B2B digital marketing literature by demonstrating how VMG IT affordances enhance interaction quality, support value co-creation, and foster marketing agility and responsiveness in dynamic digital environments (D'Ambra et al., 2022; Teece et al., 2016).

3.6.2. Managerial implications

The results of this study may offer managerial guidance for MCNs, as well as those organizations operating in the B2B digital sectors. The findings suggest several strategic actions that can help organizations enhance their B2B digital business performance.

Our study confirms that the implementation of VMG IT affordances in B2B live streaming activities can promote channel performance and economic performance (Cavusgil & Zou, 1994; Morgan et al., 2004). MCNs and B2B managers are encouraged to prioritize investment in VMG IT affordances, such as enhanced visibility tools, interactive meta-voicing feedback mechanisms, and guided decision-making systems in their digital marketing activities. These IT affordance tools directly improve communication effectiveness, customer engagement, and ultimately lead to better channel performance and higher economic returns (Cavusgil & Zou, 1994; Morgan et al., 2004; Sun et al., 2019).

In addition to the direct implementation of VMG IT affordances, the outcomes of our study indicate that MCNs and B2B firms can dynamically utilize their internal (organizational learning) and external (business networking) managerial perspectives when formulating their VMG IT affordance strategies, as these may enhance the effect of these strategies on their B2B performance (Do et al., 2022; Teece et al., 1997). For example, executives of B2B digital firms can consider using their exploratory learning in their formulation of VMG IT affordances as this can result in superior channel and economic performance. When firms promote experimentation, continuous knowledge acquisition, and openness to new digital technologies, they enhance their adaptability and responsiveness to such exploratory learning processes. This, in turn, enables more effective enactment of advanced VMG IT affordances, such as AI and VR, within B2B digital marketing and live streaming operations (Do et al., 2022; Hansen et al., 2019). Similarly, they can also develop their business networking as this can help the postulation of VMG IT affordance strategy, and this integration can help MCNs

to obtain their B2B performance goals (Do et al., 2022). By building and leveraging relationships with B2B platform providers, channel partners, and key B2B customers, firms can gain access to valuable external knowledge and resources. These external linkages contribute to strategic alignment, accelerate innovation, and support the dynamic integration of VMG IT affordances into business processes (Teece et al., 1997; Vrontis et al., 2020).

Despite these benefits, the findings also point to the potential risks of over-reliance on exploitative learning (Chung & Ho, 2021). Given the highly dynamic nature of live streaming e-commerce (Si, 2021), managers of MCNs and B2B firms are expected to be fully aware of the dark side of exploitative learning in the MCN industry (Atuahene-Gima & Murray, 2007; March, 1991). To mitigate this challenge, firms are advised to maintain a balance between exploitative and exploratory learning. Based on the study's outcomes, it is important for them to continuously engage with novel B2B live streaming knowledge, capitalize on emerging trends, and develop innovative skills to foster exploratory learning (Hansen et al., 2019). Sustaining engagement with emerging trends, evolving platform features, and novel digital marketing techniques allows managers to continuously update the organization's knowledge base and remain responsive to change (Atuahene-Gima & Murray, 2007; Hansen et al., 2019). Such a balanced learning posture strengthens the firm's dynamic capabilities, thereby enhancing its ability to fully leverage VMG IT affordances and sustain long-term B2B growth (Do et al., 2022; Teece et al., 1997).

Taken together, these implications underscore the importance of a holistic approach to digital strategy, where VMG IT affordances, organizational learning, and business networking are jointly leveraged to strengthen B2B competitiveness in technology-intensive markets.

3.7. Limitations and future research directions

Our study has several limitations that need to be considered for improvement in future research. First, this study was conducted in the context of the Chinese MCN industry. The industrial and environmental conditions of Chinese MCNs can be different from those of other countries (e.g., in regards to government policies and monetization management) (Si, 2021). To improve this limitation, further research can design a cross-cultural/country quantitative survey study to confirm the generalization of the results established in our study (Bell et al., 2018). Second, this research only focuses on three elements of IT affordance strategy, namely visibility,

meta-voicing, and guidance shopping affordance. However, IT affordance strategy may obtain other dimensions such as triggered attending, social connecting, trading affordance, and role-taking affordance as outlined in the extant literature (Dong & Wang, 2018; Dong et al., 2016; Moon, 2020). Further research can explore these additional IT affordances and explore their impact on the varied B2B performance metrics outlined in our study (Trainor et al., 2014). Lastly, further research may also consider whether IT affordances can influence other aspects of the business operation of MCNs, such as innovation and business orientation (Knight & Cavusgil, 2004). An extension on the effect of IT affordances on other business outputs can significantly increase the research application of this vital strategy and its affiliated theory (Dong et al., 2016; Sun et al., 2021).

Chapter 4: Contribution - Doctorate with Publications

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The student made the primary contribution to the manuscript/published work, including the literature review, data collection, data analysis, and preparation of the manuscript draft. Members of the supervisory team provided academic guidance, critical feedback on the research design and interpretation of results, and editorial comments during the development of the manuscript.

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Chapter 4

TTS IT Affordances, Adaptive Capability and B2B Innovation

Abstract

Recent studies have highlighted the role of information technology (IT) affordances in shaping business-to-business (B2B) performance in live-streaming contexts. However, little is known about how triggered attending, trading, and social connecting (TTS) IT affordances enable organizational innovation within Multi-Channel Network (MCN) organizations. This gap is particularly important in the triadic B2B ecosystem characterized by interdependent relationships among upstream suppliers, MCNs, and downstream business customers. To address this gap, this study develops an integrated framework grounded in affordance theory and the dynamic capability view to examine how MCNs actualize TTS IT affordances to generate innovation. It further theorizes three adaptive capabilities, including vigilant market capability, adaptive market experimentation capability, and open marketing capability, as moderating mechanisms that shape the extent to which MCNs translate the potential of TTS IT affordances into innovative coordination routines. Using survey data from 229 MCNs in China, the findings show that TTS IT affordances significantly enhance organizational innovation. In addition, all three adaptive capabilities positively moderate the relationship between TTS IT affordances and organizational innovation. This study advances B2B innovation research by showing that innovation in MCN-led live-streaming ecosystems is not merely a firm-internal outcome, but also emerges from coordination across suppliers, MCNs, and business customers. The findings also contribute to digital affordance scholarship by demonstrating how TTS IT affordances become consequential when enacted through adaptive organizational practices.

Keywords: B2B live streaming e-commerce, IT affordance, multi-channel network (MCN), adaptive capability, dynamic capability view, B2B innovation

4.1. Introduction

The rise of live streaming in business-to-business (B2B) markets has significantly reshaped traditional marketing and sales strategies (Liao et al., 2023; Mao et al., 2022). Within this evolving landscape, Multi-Channel Network (MCN) organizations operate within a triadic B2B exchange structure. This triadic structure is an interdependent system linking upstream suppliers (e.g., brand owners, factories, and manufacturers), MCNs as midstream actors, and downstream business customers (e.g., wholesalers, retailers, and reselling agents) (Si, 2021; Wang et al., 2022). Within this structure, MCNs create value by simultaneously coordinating activities across both the upstream and downstream sides of the exchange process (Wang, 2020; TOPKLOUT, 2025). Because the actions of one actor directly affect the expectations, constraints, and performance of the others, this triadic system generates interdependent informational, transactional, and relational linkages that MCNs must continually manage (Vedel et al., 2016; França et al., 2022).

Despite the rapid growth of B2B live-streaming commerce, little is known about the strategic and innovative role of MCNs as midstream actors operating between upstream principals and downstream business customers (Cai et al., 2018; Mao et al., 2022; Shi et al., 2020). Unlike traditional marketing intermediaries, MCNs must coordinate both upstream branding and content requirements and downstream transactional, informational, and relational exchanges (González-Tosat & Sádaba-Chalezquer, 2021). This dual interdependence creates structural challenges. Upstream principals increasingly evaluate MCNs through data-driven and performance-based criteria, such as conversion rates, sales growth, and return on investment (TOPKLOUT, 2025; Yang et al., 2025), whereas downstream B2B customers expect efficient transactions, interactive engagement, and real-time responsiveness (Liao et al., 2023). As a result, MCNs face innovation pressures that stem not only from internal strategic considerations but also from their responsibility to orchestrate value creation across the broader B2B digital ecosystem (HKT, 2022; Wang & Wang, 2021).

Existing B2B research rarely examines innovation from the perspective of intermediaries whose value creation depends on coordinating relationships across multiple actors (González-Tosat & Sádaba-Chalezquer, 2021). This issue is particularly salient in B2B live-streaming commerce, where MCNs rely heavily on IT affordances to mediate information flows, transactions, and social interactions across the value chain (Yang et al., 2025; Sun et al., 2018; Dong et al., 2016). Drawing on affordance theory, IT affordances are understood here as

technology-enabled action potentials rather than mere platform features. In this study, three IT affordances are especially important in the B2B live-streaming context: triggered attending affordance for capturing and directing stakeholder attention in real time, trading affordance for supporting transactional exchanges and purchase processes, and social connecting affordance for facilitating interactive communication and relationship building among multiple stakeholders (Dong & Wang, 2018). Collectively, these are termed triggered attending, trading, and social connecting (TTS) IT affordances. However, prior research on TTS IT affordances in live-streaming contexts has focused mainly on buyer-side outcomes, such as purchase intentions, trust formation, and engagement behaviours (e.g., Dong & Wang, 2018; Sun et al., 2019). As a result, limited attention has been given to how organizations such as MCNs translate these affordances into innovative organizational routines (Autio et al., 2018). Their relevance for innovation lies not in the IT features themselves, but in how MCNs enact them within their coordination and operational routines. Innovation therefore depends on an MCN's ability to recognize technological possibilities, experiment with alternative uses, and embed new practices into operations (Teece et al., 2016).

Dynamic capability theory offers an important foundation for understanding this translation process (Lee et al., 2001; Walker, 2014; Zhang & Wu, 2017). Because the B2B live-streaming industry is highly dynamic, MCNs must respond to rapid shifts in customer expectations, volatile product cycles, and continuing demands from upstream principals (Shi et al., 2020; Liao et al., 2023). In such a context, adaptive capability becomes crucial. Adaptive capability refers to an organization's ability to continuously align its marketing strategies and responses with changing market conditions and B2B customer preferences (Day, 2014; Day & Boisi, 2011). Prior research conceptualizes adaptive capability in terms of vigilant market capability, adaptive market experimentation capability, and open marketing capability (Day & Boisi, 2011). Specifically, vigilant market capability supports sensing by enabling MCNs to detect shifts in signals from both upstream principals and downstream B2B customers (Reimann et al., 2021; Liao et al., 2023). Adaptive market experimentation capability supports seizing by allowing MCNs to test and select effective affordance enactments through iterative experimentation (Eisenhardt & Martin, 2000; Rahmah et al., 2020). Open marketing capability supports reconfiguring by enabling MCNs to integrate distributed external knowledge into revised coordination routines (He et al., 2022; Pinkse & Bohnsack, 2021). Together, these adaptive capabilities enable MCNs to enact the sensing–seizing–reconfiguring mechanisms emphasized in the dynamic capability view, helping them anticipate

market changes, coordinate knowledge across triadic partners, and make effective use of technological advances such as TTS IT affordances (Reimann et al., 2021; Day & Boisi, 2011). Thus, adaptive capabilities collectively shape whether MCNs can actualize the potential embedded in TTS IT affordances and transform technological possibilities into organizational innovation (Helfat & Peteraf, 2003; Volkoff & Strong, 2017).

Taken together, these considerations lead to the central question guiding the present study: how do MCNs, as midstream actors embedded in B2B live-streaming ecosystems, actualize TTS IT affordances and adaptive capabilities to generate innovation under conditions of triadic interdependence? (Svensson, 2004; Vedel et al., 2016). By articulating this perspective, the study contributes to ongoing discussions in B2B marketing and digital innovation. First, this study highlights MCN innovation as a triadic coordination challenge rather than a purely firm-internal outcome, thereby situating innovation within a broader structural context (Svensson, 2004; Vedel et al., 2016; França et al., 2022). Second, this study conceptualizes TTS IT affordances as organizational-level affordances rather than consumer-level experiences, showing that their innovative value depends on how MCNs enact them within coordination routines rather than on technological features alone (Han et al., 2023; Knight & Cavusgil, 2004; Weerawardena, 2003). Third, this study extends dynamic capability theory by showing how adaptive capability moderates the relationship between TTS IT affordances and organizational innovation in the volatile B2B live-streaming context (Akgün & Polat, 2022; Zhang & Wu, 2017). By highlighting the role of adaptive capability, the study offers new insights into how MCNs can maximize the innovation potential of TTS IT affordances in responding to rapid B2B market changes (Day & Boisi, 2011). Finally, the study proposes a novel theoretical framework that combines affordance theory with dynamic capability theory and can inform future research on innovation in B2B contexts (Weerawardena, 2003; Liu et al., 2024; Zimmermann et al., 2024). Collectively, these contributions address important empirical gaps while also offering practical guidance for MCN executives seeking to foster innovation and sustain competitive positioning in B2B digital environments.

4.2. Literature review

4.2.1. The role of MCNs in the B2B live streaming industry

The B2B live-streaming market in China has expanded rapidly, increasing the need for MCNs to act as digital intermediaries that coordinate interactions between multiple market actors (González-Tosat & Sádaba-Chalezquer, 2021). Recent cases highlight how live streaming has transformed B2B promotional activities. For example, Zoomlion, a heavy-industrial equipment manufacturer in China, successfully used B2B live streaming for new product launches, attracting over 300,000 viewers and receiving orders for 2,000 units within 39 minutes (Kang et al., 2021). Similarly, China Aerospace Science and Industry Corporation (CASIC) used Taobao live streaming to promote a high-value commercial rocket launch service to enterprise buyers, demonstrating how live streaming can support lead generation and transaction initiation even for complex B2B offerings (Kang et al., 2021). These cases underscore the transformative potential of live streaming for enhancing B2B performance (Kang et al., 2021).

Prior research has conceptualized the B2B live-streaming ecosystem as a triadic arrangement connecting upstream suppliers, MCNs, and downstream B2B customers (Liao et al., 2023; Yang et al., 2025). As midstream intermediaries, MCNs support upstream principals in conducting live-streaming campaigns and engage downstream actors, including reselling agents, wholesalers, and retailers, to improve promotional effectiveness and transaction efficiency (Si, 2021; Wang, 2020; Wang et al., 2022; TOPKLOUT, 2025). In doing so, MCNs coordinate value creation across the triadic B2B ecosystem by linking its promotional and transactional processes (Liao et al., 2023; Wang et al., 2022). In practice, MCNs offer integrated services including content creation (e.g., planning live-streaming scripts, product demonstrations, and promotional materials), audience engagement (e.g., interacting with viewers in real time and responding to inquiries), partnership management (e.g., coordinating relationships with upstream brands, suppliers, and downstream business buyers), and commercial monetization (e.g., facilitating sales conversion, lead generation, and transaction outcomes) (TOPKLOUT, 2025; Liao et al., 2023). Because these activities require the simultaneous coordination of upstream principals and downstream business customers, MCNs operate within a structural configuration characterized by distinctive informational, transactional, and relational interdependencies (Vedel et al., 2016; França et al., 2022; Liao et al., 2023). These interdependencies place significant pressure on MCNs to innovate in how they manage B2B live-streaming operations, integrate digital tools, and reconfigure coordination routines. Through these activities, MCNs facilitate efficient interactions between upstream suppliers and diverse downstream customers, thereby significantly enhancing transactional and promotional effectiveness within B2B

digital ecosystems (Li, 2021; Wang, 2020). The detailed industry context, including specific examples, market size projections, and expanded MCN functionalities, is provided in Appendix G.

Given the strategic role of MCNs, understanding their operational innovation and effective use of IT affordances is critical for sustaining competitive advantage in dynamic B2B digital environments (Liao et al., 2023). However, limited attention has been paid to how MCNs generate innovation within this triadic structure. Accordingly, this study examines how MCNs can leverage live streaming strategies and organizational capabilities to address rapidly evolving market demands.

4.2.2. Affordance theory and TTS IT affordances

The concept of affordances has become increasingly important for understanding how organizations use digital technologies to enable particular forms of action. Drawing on Gibson's (1977) foundational view of affordances as action possibilities offered by an environment, organizational research suggests that technological affordances influence work routines, coordination mechanisms, and innovation processes (Volkoff & Strong, 2013). Importantly, affordances are not technological features themselves, but the possibilities for action that arise through the relationship between actors and technologies (Gibson, 1977). In e-commerce contexts, for instance, affordances such as efficient navigation, informed evaluation, and seamless purchasing are enabled by platform features including product filtering, customer reviews, and one-click purchase options. As live streaming has emerged as an important business model in the field of human–computer interaction (HCI), understanding IT affordances is essential for explaining value creation in the B2B live-streaming industry (Dong & Wang, 2018; Yang et al., 2025).

Within the context of B2B live-streaming commerce, a set of IT affordances has emerged as central to understanding how digital intermediaries coordinate multi-actor value exchanges. These include triggered attending, which enables actors to capture and direct stakeholder attention in real time; trading, which supports transactional exchanges and purchase processes; and social connecting, which facilitates interactive communication and relationship building among multiple stakeholders. Collectively, these are termed TTS IT affordances (Dong et al., 2016; González-Tosat & Sádaba-Chalezquer, 2021). While prior studies have predominantly conceptualized TTS IT affordances from the perspective of consumers or end users (see Table

4.1) (e.g., Dong & Wang, 2018; Sun et al., 2018; Saffanah et al., 2022), the present research repositions them as organizational-level IT affordances that enable MCNs to structure and manage triadic coordination between upstream suppliers and downstream business customers (Vedel et al., 2016; Yang et al., 2025).

In this study, TTS IT affordances are conceptualized as organizational affordances that enable MCNs to adapt operational processes and develop new approaches to orchestrating upstream–midstream–downstream exchanges (Claggett & Karahanna, 2025; Liao et al., 2023). Viewing TTS IT affordances through this lens provides a stronger theoretical foundation for understanding their role in shaping MCN innovation, as these affordances create the technological basis from which new coordination practices, campaign innovations, and relational mechanisms can emerge (Gibson, 1977; Volkoff & Strong). Their influence on innovation is therefore not inherent, but contingent on the organization's ability to interpret, experiment with, and actualize the opportunities embedded in TTS IT affordances (Teece et al., 2016; Shan & Liu, 2025). Taken together, this study advances affordance theory by extending the understanding of TTS IT affordances from a consumer-oriented perspective to an organizational and triadic coordination context, while also providing new insights into how these affordances can enhance the innovative capacity of MCNs in an increasingly digitalized B2B marketplace (Chatterjee et al., 2020; Knight & Cavusgil, 2004).

TABLE 4.1: LITERATURE REVIEW OF IT AFFORDANCE

Author	Contents/Findings	Perspective
Dong et al., (2016)	Building a valid measurement for six IT affordances (i.e., visibility, meta-voicing, guidance shopping affordance, triggered attending, social connecting and trading)	B2C
Dong and Wang, (2018)	IT affordance → (+) buyer-seller social ties and interactivity → (+) repurchase intention	B2C
Sun et al., (2019)	IT affordance → (+) customer purchase decision	B2C
Sun et al., (2020)	IT affordance → (+) immersion and presence → (+) purchase intention	B2C
Moon, (2020)	IT affordance → (+) user engagement in live streaming service	B2C
Xie and Luo, (2021)	IT affordance → (+) consumers' impulse purchase intention	B2C
Saffanah et al., (2022)	IT affordance → (+) immersion and presence	B2C
	IT affordance → (+) interactivity during live streaming	B2C
	IT affordance → (+) purchase intention and actual purchase	B2C
Hua et al., (2023)	IT affordance → (+) customers' brand citizenship behaviour and customer purchase intention	B2C
Shao et al., (2024)	Social media IT affordance → (+) cross-platform traffic imports in social E-commerce	B2C
Majchrzak et al., (2013)	Social media IT affordances → (+) productive knowledge conversations	Organization level
Leonardi and Treem, (2011)	Social media IT affordances → (+) knowledge management	Organization level

Note: Visibility affordance: the possibility of visualization of the product or service; Meta-voicing affordance: the possibility to respond and comment on product content and sellers; Guidance shopping affordance: the possibility to guide customers to make purchasing decisions via customization services; Triggered attending affordance: the possibility to notify new content or modifications about products; Trading affordance: the possibility to enable customers to finish the process of purchase or conversion; Social connecting affordance: The possibility to establish or maintain social ties and involve users in reciprocal commerce relationships (Dong et al., 2016).

4.2.3. Adaptive capability through a dynamic capability lens

As MCNs operate within highly dynamic B2B live-streaming ecosystems, their ability to transform technological potential into meaningful organizational outcomes depends critically on the capabilities that govern how they sense, interpret, and respond to environmental change (Eisenhardt & Martin, 2000; Day & Boisi, 2011). Adaptive capability has been recognized as an essential organizational competence that enables firms to align marketing actions and operational routines with evolving market conditions (Day, 2011). This perspective resonates strongly with the broader logic of dynamic capability theory (Wang & Ahmed, 2007). From this theoretical standpoint, innovation does not arise from technology alone, but from a firm's ability to continuously reshape its processes under conditions of environmental dynamism (Teece et al., 1997; Wang & Ahmed, 2007).

In this study, adaptive capability is not conceptualized as a subcomponent of dynamic capability theory. Rather, its functioning embodies the core sensing–seizing–reconfiguring mechanisms emphasized in the dynamic capability view (Day & Boisi, 2011; Hunt & Madhavaram, 2020; Uzkurt et al., 2024). This conceptualization aligns closely with the challenges faced by MCNs as midstream intermediaries, because their effectiveness depends not only on the availability of technological features, but also on their ability to orchestrate these features in ways that address the complex interdependencies of B2B live-streaming ecosystems (Yang et al., 2025). Within these ecosystems, MCNs face high levels of volatility shaped by upstream principals' shifting marketing objectives, downstream buyers' real-time behavioural feedback, and platform-driven operational constraints (Liao et al., 2023; Mao et al., 2022; TOPKLOUT, 2025). Under such conditions, the innovative value of TTS IT affordances does not derive solely from their technological properties. Rather, their effects depend on whether MCNs possess the adaptive capability required to translate technological action potentials into new coordination routines (Aggarwal et al., 2017). Adaptive capability therefore functions as the organizational mechanism that amplifies or constrains the innovative effects of TTS IT affordances. This framing provides a theoretically grounded explanation for why TTS IT affordances alone are unlikely to generate innovation unless they are matched with appropriate organizational responsiveness (Day & Boisi, 2011; Teece, 2007).

Building on this dynamic capability perspective, this study adopts Day's (2011) multidimensional conceptualization of adaptive capability, comprising vigilant market capability, adaptive market experimentation capability, and open marketing capability. Together, these capabilities enable MCNs to sense market shifts, experiment with alternative coordination routines, and collaborate with external partners, thereby unlocking the innovation potential embedded in TTS IT affordances (Day & Boisi, 2011; Hunt & Madhavaram, 2020). The following subsections elaborate on each adaptive capability and its relevance to MCNs' innovation processes.

4.2.3.1. Vigilant market capability

Vigilant market capability refers to a firm's ability to continuously scan and monitor the market for emerging trends, competitor activities, and shifts in customer preferences (Day & Boisi, 2011; Hunt & Madhavaram, 2020; Uzkurt et al., 2024). Firms with strong vigilant market capability are better positioned to identify market

opportunities and threats, enabling them to respond quickly by adjusting their marketing strategies (Hunt, 2013). This proactive orientation allows organizations to anticipate change and maintain competitive advantage in volatile markets (Day & Boisi, 2011). By staying alert to market developments, firms can identify opportunities for product development, process improvement, and strategic adjustment, all of which may lead to innovative solutions (Teece et al., 2016; Weerawardena, 2003). In the context of MCNs, vigilant market capability is particularly important because it facilitates the early detection of shifts in customer preferences and technological developments in live-streaming practices related to IT affordances (Hunt, 2013; Hunt & Madhavaram, 2020). As a result, vigilant market capability helps MCNs strengthen innovation and sustain a competitive edge in the rapidly evolving B2B digital environment (Hunt & Madhavaram, 2020; Hunt & Morgan, 1996).

4.2.3.2. Adaptive market experimentation capability

Adaptive market experimentation capability refers to a firm's systematic ability to iteratively experiment with novel ideas, processes, and business models, thereby enabling continuous refinement through strategic trial-and-error learning (Day & Boisi, 2011). Firms with strong experimentation capability are better able to adjust their strategies rapidly and respond effectively to evolving market demands (Lo et al., 2022; Santos-Vijande et al., 2005; Tippins & Sohi, 2003). For MCNs operating in rapidly changing B2B live-streaming environments, this capability is particularly important because it enables them to explore and test new content formats, audience engagement approaches, and collaborative business models (Day, 2014; Mao et al., 2022; TOPKLOUT, 2025). In addition, adaptive market experimentation capability helps reduce the risks associated with adopting emerging technologies, such as TTS IT affordances, by allowing MCNs to validate and refine new approaches before full-scale implementation (Dong et al., 2016; Lo et al., 2022). As a result, adaptive experimentation fosters an innovation-oriented organizational culture and helps MCNs remain agile and competitive in responding to the evolving needs of B2B principals and changing market conditions (Hunt & Madhavaram, 2020; Liao et al., 2023; Wittmann et al., 2009).

4.2.3.3. Open marketing capability

Open marketing capability highlights the strategic importance of collaboration and transparent communication with external stakeholders, including customers, principals, suppliers, and technology partners (Day & Boisi, 2011). This capability enables firms to access external sources of knowledge, insight, and resources, thereby broadening their innovation potential and strengthening their responsiveness to market change (Hunt, 1997; Hunt & Madhavaram, 2020; Wittmann et al., 2009). In the context of MCNs, open marketing capability is particularly important because their operations depend heavily on extensive inter-organizational networks (Wang & Wang, 2021). For example, MCNs rely on strong relationships with B2B principals, customers, content creators, influencers, live-streaming platforms, and other collaborators to support their success in the live-streaming and e-commerce industries (Burt & Soda, 2021; Hunt, 1997; Liao et al., 2023). By cultivating open marketing capability, MCNs can enhance knowledge sharing and co-creation, thereby supporting the effective use and refinement of TTS IT affordances (Day & Boisi, 2011; Hunt & Madhavaram, 2020; Siaw & Sarpong, 2021). Consequently, this adaptive capability enables MCNs to leverage external expertise and resources to drive innovation and maintain a competitive edge in the rapidly evolving B2B digital ecosystem (Day & Boisi, 2011; He et al., 2022).

4.2.4. Organizational innovation in B2B live-streaming ecosystems

Organizational innovation generally refers to the intentional development and implementation of new or significantly improved processes, services, business models, or managerial routines that enhance an organization's effectiveness and competitiveness (Chung, 2019; Damanpour & Aravind, 2011; Weerawardena & Mavondo, 2011). While early innovation research emphasized technological advancement, more recent studies suggest that innovation also emerges through redesigned business models, new coordination routines, and structural transformations (Crossan & Apaydin, 2010; Mitchell & Zmud, 1999).

Within B2B live-streaming ecosystems, organizational innovation is inherently relational and triadic. MCNs therefore do not innovate in isolation (Niu & Ma, 2025). Rather, their innovations emerge from their role as midstream coordinators that must align the expectations, information flows, and transactional processes of upstream principals and downstream business customers (Liao et al., 2023; Wang et al., 2022). As midstream actors, MCNs continuously adjust their content production routines, campaign management processes, and internal organizational structures in response to rapidly changing market signals, platform algorithms, and

principal expectations (TOPKLOUT, 2025; Mao et al., 2022). Innovation in this context therefore includes not only improved live-streaming formats and transactional mechanisms, but also redesigned collaboration practices, reorganized workflow systems, and new managerial routines that support more effective triadic coordination (Lin et al., 2021; Mitchell & Zmud, 1999).

Existing digital research on organizational innovation has increasingly examined how emerging technologies, such as artificial intelligence (AI) and big data analytics, can stimulate innovation within firms (e.g., Li et al., 2023; Manis & Madhavaram, 2023). Despite this growing interest in digitally driven innovation, limited attention has been paid to how TTS IT affordances contribute to organizational innovation in the B2B live-streaming context. To address this gap, the present study examines how TTS IT affordances can stimulate organizational innovation within MCNs. In doing so, it clarifies the mechanisms through which these affordances enable MCNs to reconfigure practices and sustain continuous innovation, in line with the dynamic capability view (Teece et al., 1997; Day, 2011). By situating organizational innovation within the dynamic context of B2B live streaming, this study advances an ecosystem-based perspective on how midstream intermediaries develop and sustain innovation (Liao et al., 2023).

4.3. Research Hypotheses

Grounded in affordance theory and the dynamic capability view, the proposed framework conceptualizes TTS IT affordances as organizational-level action potentials that MCNs can actualize to redesign coordination routines across triadic B2B exchanges (Volkoff & Strong, 2013; Teece, 2007; Mitchell & Zmud, 1999). As midstream actors in the value chain, MCNs must manage both the expectations of upstream principals and the transactional and relational needs of downstream business customers (Claggett & Karahanna, 2025; Liao et al., 2023). Their ability to innovate depends not only on the technological opportunities embedded in TTS IT affordances, but also on their adaptive capability to sense, interpret, and reconfigure practices in response to environmental dynamism (Day, 2011; TOPKLOUT, 2025). Accordingly, the model positions TTS IT affordances as drivers of organizational innovation, while adaptive capability functions as a contingent mechanism that shapes whether and how these affordance potentials are translated into innovative coordination routines. The conceptual model and specific hypotheses are presented in Figure 1.

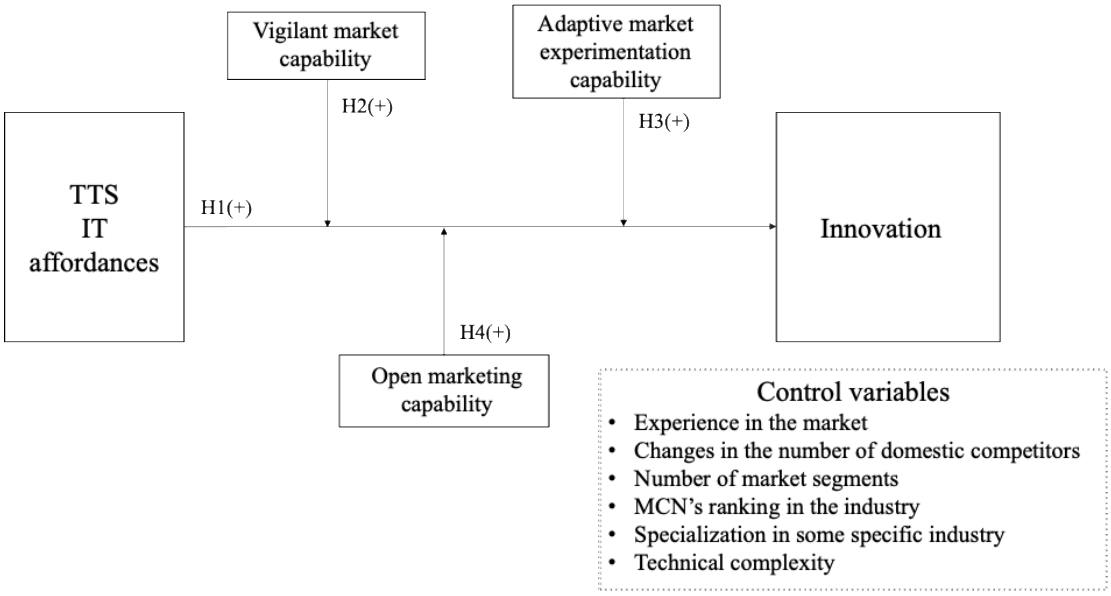

FIGURE 4.1: CONCEPTUAL FRAMEWORK

4.3.1. TTS IT affordances and organizational innovation

As organizational-level action potentials, TTS IT affordances provide MCNs with a technological basis for redesigning how they coordinate real-time interactions between upstream principals and downstream business customers (Volkoff & Strong, 2013; Guo et al., 2025). In triadic B2B live-streaming ecosystems, these affordances do not exert influence through their functional features alone, but through the organizational processes by which MCNs actualize them into new coordination routines (Vedel et al., 2016; França et al., 2022). From an affordance-theoretic perspective, triggered attending, trading, and social connecting affordances represent technological action potentials embedded in live-streaming platforms that MCNs can actualize to support new ways of coordinating triadic B2B exchanges (Dong & Wang, 2018; Sun et al., 2019). In this context, TTS IT affordances provide MCNs with opportunities to redesign workflow routines, enhance cross-actor communication, and improve campaign orchestration, thereby creating conditions under which organizational innovation can emerge (Guo et al., 2025; Mitchell & Zmud, 1999). This framing positions TTS IT affordances at the organizational level, rather than the buyer side, reflecting the role of MCNs as midstream actors that must continually restructure how they link upstream principals with downstream business customers (Liao et al., 2023; Vedel et al., 2016).

In dynamic B2B digital industries such as live streaming, organizational innovation is essential for maintaining responsiveness to shifting principal demands, volatile customer preferences, and platform-driven operational

changes (Mao et al., 2022; TOPKLOUT, 2025; Wang & Wang, 2021). Previous studies suggest that TTS IT affordances can capture and transmit real-time information during live-streaming activities (Dong & Wang, 2018; Mao et al., 2022; Sun et al., 2019), providing MCNs with continuous visibility into customer reactions, content performance, and transactional patterns. For example, triggered attending affordance enables timely product updates and promotional announcements, supporting MCNs' ability to adjust stream content and campaign pacing in response to emerging signals (Dong & Wang, 2018; Moon, 2020). This real-time flow of information encourages MCNs to iteratively adapt their service offerings and foster continuous service innovation (Han et al., 2023; Knight & Cavusgil, 2004). Trading affordance further supports innovation by enabling new transactional processes, such as real-time payment methods, inventory updates, and alternative ordering systems, which require MCNs to redesign their operational routines (Sun et al., 2019; Mitchell & Zmud, 1999). Likewise, social connecting affordance fosters interactive communication environments that allow MCNs to align live-streaming activities with the changing needs of both B2B principals and downstream business customers (Moon, 2020; Saffanah et al., 2022). Through these mechanisms, TTS IT affordances generate continuous feedback loops that support the refinement of strategic operations and enable MCNs to respond more effectively to market fluctuations (Walker, 2014; Weerawardena, 2003). Accordingly, the real-time, information-rich nature of TTS IT affordances can drive continuous organizational innovation within MCNs (Dong & Wang, 2018; Mao et al., 2022; Sun et al., 2019).

Beyond service adjustments, TTS IT affordances also support deeper forms of process and administrative innovation. Their interactive and agile nature enables MCNs to redesign workflow processes, streamline coordination with upstream principals and downstream customers, and improve the efficiency of live-streaming operations (Majchrzak et al., 2013; Song et al., 2021). For instance, social connecting affordance provides the digital infrastructure necessary for real-time triadic communication among MCNs, live streamers, and business customers, thereby enabling rapid issue resolution and adaptive process refinement (Lee et al., 2018; Damanpour & Aravind, 2011; Walker, 2014). Triggered attending and trading affordances also create opportunities for MCNs to develop specialized organizational roles, such as teams responsible for real-time content monitoring or monetization optimization, thereby supporting administrative and structural innovation (Dong et al., 2016; Mitchell & Zmud, 1999; Kimberly & Evanisko, 1981). In this way, TTS IT affordances do not generate innovation merely through their functional features; rather, they enable MCNs to redesign

coordination practices, restructure workflows, and build new managerial routines that are essential for sustaining performance in dynamic B2B live-streaming ecosystems (Damanpour & Aravind, 2011; Lin et al., 2022). Collectively, these affordances act as triggers for innovation that help MCNs remain responsive in fast-evolving markets (Mao et al., 2022; Sun et al., 2019). Hence, we propose:

H1: TTS IT affordances positively influence the organizational innovation of MCNs.

4.3.2. TTS IT affordances, adaptive capability, and organizational innovation

Drawing on affordance theory, the innovative value of triggered attending, trading, and social connecting affordances does not stem from their technological features alone, but from how organizational actors interpret and enact these possibilities within coordination routines (Volkoff & Strong, 2013; Anderson & Robey, 2017). In the context of B2B live streaming, TTS IT affordances represent action potentials that enable MCNs to redistribute information flows, redesign transactional mechanisms, and reshape interaction structures across upstream–midstream–downstream exchanges (Guo et al., 2025; Mitchell & Zmud, 1999). These potentials therefore remain latent unless MCNs possess the organizational ability to sense emerging opportunities, experiment with alternative uses, and reconfigure internal processes accordingly (Eisenhardt & Martin, 2000; Day & Boisi, 2011). This mechanism is consistent with the dynamic capability view, which suggests that technological inputs generate innovation only when firms are able to continuously reshape routines in response to environmental dynamism (Eisenhardt & Martin, 2000; Teece et al., 1997). Accordingly, TTS IT affordances alone do not guarantee innovation; rather, innovation depends on MCNs' ability to actualize these affordances in ways that address the relational and operational demands of upstream principals and downstream business customers (Venters et al., 2014).

Adaptive capability plays a central role in this actualization process because it refers to the organizational ability to adjust and respond to changing environments and customer demands (Day & Boisi, 2011; Teece et al., 1997). MCNs operate in highly dynamic B2B live-streaming ecosystems characterized by rapid changes in upstream principal expectations, platform regulations, and downstream buyer behaviours (Liao et al., 2023; Mao et al., 2022). Under such conditions, adaptive capability enables MCNs to discern which affordances are most salient, experiment with new coordination routines, and embed successful practices into ongoing operations (Day &

Boisi, 2011; Piening & Salge, 2015). In this sense, adaptive capability performs the sensing–seizing–reconfiguring functions emphasized in the dynamic capability view (Teece, 2007; Piening & Salge, 2015). Accordingly, this study adopts Day's (2011) multidimensional conceptualization of adaptive capability, comprising vigilant market capability, adaptive market experimentation capability, and open marketing capability. These three capabilities are expected to shape the extent to which MCNs can strategically leverage TTS IT affordances to generate organizational innovation within triadic B2B live-streaming ecosystems (Liao et al., 2023; Vedel et al., 2016). Within this framework, adaptive capability functions as a moderator that shapes whether and how the technological possibilities embedded in TTS IT affordances are transformed into innovative coordination routines and managerial practices (Piening & Salge, 2015).

4.3.2.1. TTS IT affordances, vigilant market capability, and organizational innovation

Vigilant market capability refers to an organization's ability to continuously scan, interpret, and anticipate shifts in market conditions, competitor actions, and customer preferences (Hunt & Madhavaram, 2020; Reimann et al., 2021). Within triadic B2B live-streaming ecosystems, MCNs must simultaneously interpret informational cues from upstream principals and downstream business customers, making vigilance essential for determining when and how TTS IT affordances should be enacted (Guo et al., 2025; Venters et al., 2014). From a dynamic capability perspective, vigilant market capability performs a core sensing function that enables MCNs to identify which affordance potentials are actionable and to assess their relevance under rapidly changing conditions (Eshima & Anderson, 2017; Teece et al., 1997).

Accordingly, vigilant market capability can strengthen the relationship between TTS IT affordances and organizational innovation by enhancing MCNs' ability to detect real-time signals and translate them into reconfigured workflows, updated service routines, and new coordination practices (Day, 2011; Eshima & Anderson, 2017). For example, through vigilant observation of immediate market responses, MCNs can adjust content in real time and refine triggered attending affordances to deliver timely and targeted notifications aligned with current demand (Ali et al., 2022; Kimberly & Evanisko, 1981). Similarly, vigilant monitoring enables MCNs to interpret transactional patterns and promptly adapt trading affordances to match the evolving expectations of B2B buyers, thereby supporting targeted innovation in service delivery (Cabeza-Pullés et al., 2020; Damanpour & Aravind, 2011). In this way, the ability to interpret and act on environmental cues allows

MCNs to convert TTS IT affordances into innovation outcomes, rather than merely using them as static platform features (Hunt & Madhavaram, 2020; Piening & Salge, 2015).

Moreover, vigilant market capability supports the ongoing refinement of TTS IT affordances by helping MCNs keep pace with technological and industry-level changes, particularly through analytics-driven insights and customer feedback (Varadarajan, 2020; Volkoff & Strong, 2017). Under conditions of strong vigilance, triggered attending affordances become more effective because MCNs can use big-data insights to optimize message timing and information relevance (Li et al., 2023; Sun et al., 2021). The ability to adapt content quickly not only enhances customer satisfaction but also fosters a culture of continuous innovation (Chatterjee et al., 2020; Kimberly & Evanisko, 1981; Weerawardena, 2003). Vigilance also strengthens trading affordances by enabling MCNs to interpret transactional patterns rapidly and reconfigure monetization strategies in response to emerging B2B customer needs (Guo et al., 2018; Day & Boisi, 2011). In addition, vigilant market capability enhances the effectiveness of social connecting affordances by enabling MCNs to gather social data and apply big-data analytics to redesign communication processes that better meet the expectations of upstream principals and downstream B2B partners (Li et al., 2023; Ali et al., 2022). Collectively, vigilant market capability strengthens MCNs' ability to transform the action potentials of TTS IT affordances into timely, innovation-oriented organizational routines.

H2: Vigilant market capability positively moderates the relationship between TTS IT affordances and organizational innovation of MCNs.

4.3.2.2. TTS IT affordances, adaptive market experimentation capability, and organizational innovation

Adaptive market experimentation capability refers to an organization's ability to iteratively test new ideas, evaluate alternative routines, and refine operational processes through structured trial-and-error learning (Day & Boisi, 2011). For MCNs embedded in triadic B2B live-streaming ecosystems, experimentation is essential because upstream principals, downstream business customers, and platforms impose rapidly shifting and sometimes conflicting demands (Liao et al., 2023; TOPKLOUT, 2025). Under such conditions, MCNs cannot rely on static routines; instead, they must continually experiment with new coordination practices, content formats, and service configurations (Yang et al., 2025). From a dynamic capability perspective, adaptive market

experimentation capability performs a seizing function by enabling MCNs to evaluate, select, and operationalize the innovative potential embedded in TTS IT affordances (Eisenhardt & Martin, 2000; Teece et al., 1997).

Through experimentation, MCNs can test how triggered attending affordances may be used to restructure notification workflows or improve content-timing strategies (Dong & Wang, 2018; Saffanah et al., 2022), explore how trading affordances may support new transaction models, payment processes, or integrated order-management routines (Mangiaracina et al., 2019), and trial novel interaction scripts or engagement mechanisms enabled by social connecting affordances (Dong & Wang, 2018; Cuthbertson & Furseth, 2022). These structured experiments generate experiential feedback that allows MCNs to identify which affordance enactments improve coordination efficiency, enhance real-time responsiveness, and support new service designs across triadic relationships. In this way, adaptive market experimentation capability provides an organizational learning mechanism through which MCNs transform the action potentials of TTS IT affordances into novel, evidence-based coordination and managerial practices, thereby enhancing organizational innovation (Cainelli et al., 2006; Hunt & Madhavaram, 2020).

As dynamic capability theory suggests, experimentation must become routinized in fast-changing, technology-mediated industries such as B2B live streaming (Teece et al., 2016). Through repeated trials and feedback loops, MCNs can assess which enactments of TTS IT affordances improve coordination efficiency, responsiveness, and service quality, thereby creating organizational innovative value (Kimberly & Evanisko, 1981; Rahmah et al., 2020). For example, iterative A/B testing enables MCNs to refine triggered attending affordances by identifying message formats or timing strategies that optimize real-time engagement (Lin, 2008; Lin & Lee, 2005). This adaptive capability allows MCNs to make informed adjustments and encourages process innovation in service delivery (Sun et al., 2021; Hunt & Madhavaram, 2020; Teece et al., 2016). Similarly, MCNs can experiment with alternative pricing structures or transaction workflows to determine how trading affordances may better support fluctuating purchasing patterns and downstream customer behaviours (Dong & Wang, 2018; Mao et al., 2022; Mangiaracina et al., 2019). By testing different interaction scripts or engagement cues, MCNs can also identify approaches that improve responsiveness and strengthen relational coordination across triadic partners (Cuthbertson & Furseth, 2022; Uzkurt et al., 2024). This, in turn, enhances the use of social connecting affordances and creates a flexible foundation for ongoing innovation (Volkoff & Strong, 2017; Ali et al., 2022).

Overall, adaptive market experimentation capability provides a mechanism through which the action potentials of TTS IT affordances are converted into novel, evidence-based practices that sustain continuous organizational innovation (Han et al., 2023; Rahmah et al., 2020; Volkoff & Strong, 2017). As such, we hypothesize:

H3: Adaptive market experimentation capability positively moderates the relationship between TTS IT affordances and organizational innovation of MCNs.

4.3.2.3. TTS IT affordances, open marketing capability, and organizational innovation

Open marketing capability refers to an organization's ability to establish and maintain broad, collaborative relationships with external stakeholders, such as B2B principals, live-streaming platforms, and technology providers, in order to access external knowledge and promote innovation (Day & Boisi, 2011; He et al., 2022; Pinkse & Bohnsack, 2021). For MCNs embedded in triadic B2B live-streaming ecosystems, such openness is structurally inherent, because upstream principals depend on MCNs for professionalized content production, while downstream business customers rely on MCNs for transaction support and real-time communication (Liao et al., 2023; Wang & Wang, 2021). Under these interdependencies, organizational innovation emerges not solely from internal capabilities, but also from the ability to integrate diverse external inputs into coordination and service routines (Damanpour & Aravind, 2011). From a dynamic capability perspective, open marketing capability performs a core reconfiguring function by enabling MCNs to revise coordination routines, redesign workflow structures, and incorporate multi-actor insights into innovation processes (Eisenhardt & Martin, 2000; Teece et al., 1997). In parallel, affordance theory suggests that TTS IT affordances create technological possibilities for real-time coordination, interactive engagement, and transactional integration (Volkoff & Strong, 2013; Dong & Wang, 2018). Yet these possibilities remain latent unless external knowledge and collaboration help shape how they are enacted (Venters et al., 2014; Anderson & Robey, 2017).

Accordingly, open marketing capability enables MCNs to access and integrate diverse external knowledge from their networks and use these insights to refine and experiment with TTS IT affordance enactments (Day & Boisi, 2011; He et al., 2022; Damanpour & Aravind, 2011). For instance, MCNs may refine triggered attending affordances by co-creating content with upstream principals or by customizing notification strategies based on collaborative analytics shared by platforms (Konsti-Laakso et al., 2012; Sun et al., 2021; Chung, 2019).

Similarly, transactional insights from downstream B2B customers can inform adaptations to trading affordances, encouraging new payment, ordering, or logistics configurations that enhance coordination across the triad (Dong & Wang, 2018; Hofacker et al., 2020; Naik et al., 2020). Social connecting affordances may also become more innovative when MCNs collaborate with influencers, buyers, and strategic partners to redesign engagement mechanisms and communication flows (Cuthbertson & Furseth, 2022; Wang & Wang, 2021). Taken together, open marketing capability strengthens MCNs' ability to translate the technological possibilities of TTS IT affordances into collaborative, innovation-oriented routines by enabling the integration of diverse external knowledge into organizational processes (Day & Boisi, 2011; Damanpour & Aravind, 2011; Teece et al., 1997).

Open marketing capability also fosters deeper relational embeddedness and collaborative problem-solving across triadic partners, enabling MCNs to experiment with and co-develop TTS IT affordance enactments (Dong & Wang, 2018; Si, 2021). For example, it facilitates frequent and strategic communication with B2B partners, enabling MCNs to adjust triggered attending affordances in real time by tailoring content delivery to shared market insights (Day & Boisi, 2011; Sun et al., 2021; Volkoff & Strong, 2013). This, in turn, helps MCNs introduce new and innovative services (Wang & Chung, 2020). Similarly, by strengthening interactions across networks, open marketing capability enables MCNs to adapt trading affordances by refining monetization methods in line with changing market demands (Dong & Wang, 2018; Sun et al., 2021). Such responsiveness encourages iterative innovation in MCNs' pricing strategies and transaction processes (Mao et al., 2022). Likewise, by expanding communication channels and deepening relationships across triadic partners, open marketing capability enhances the innovation-enabling value of social connecting affordances, allowing MCNs to redesign engagement mechanisms and co-create improvements to the live-streaming experience (Day & Boisi, 2011; Konsti-Laakso et al., 2012; Si, 2021). Collectively, by integrating diverse external insights into the enactment of TTS IT affordances, open marketing capability strengthens MCNs' flexibility and responsiveness and supports the development of continuous, collaboration-driven organizational innovation (Wang & Chung, 2020; Day & Boisi, 2011; Bharadwaj et al., 2013).

H4: Open marketing capability positively moderates the relationship between TTS IT affordances and organizational innovation of MCNs.

4.4. Research Methodology

4.4.1. Sample and data collection

This study employs a quantitative survey approach to test the proposed hypotheses (Bell et al., 2022). A quantitative methodology is appropriate for examining TTS IT affordances, adaptive capability, and organizational innovation, and it offers useful insights into these research domains (e.g., Dong & Wang, 2018; Chung, 2019; Guo et al., 2018; Wang & Chung, 2020; Atuahene-Gima et al., 2006). The study focuses on MCNs in China, as China has a large market of approximately 4,000 MCNs and therefore provides an appropriate sampling frame (Statista, 2023). The sampling frame was derived from several credible sources, including the State Administration of Radio MCN research report (SVA, 2020), the Taobao Live Streaming Ecological Development Report, the White Paper on China's MCN Industry (TOPKLOUT, 2025), and backend data from online B2B trading platforms such as 1688.com (Liao et al., 2023). These sources are widely recognized for providing accurate and comprehensive information on MCNs (Mao et al., 2022; TOPKLOUT, 2025; Liao et al., 2023). Together, they provide a representative overview of MCNs across different regions and sectors in China (Bell et al., 2022).

A random sampling approach was used to select 1,200 MCNs in order to minimize selection bias and enhance sample representativeness (Bell et al., 2022; Liao et al., 2023). These MCNs were contacted via email and WeChat and invited to participate in the survey. To mitigate common method bias, a double-respondent survey design was employed, with two senior executives from each MCN completing the questionnaire (Podsakoff et al., 2003). One senior executive (e.g., CEO, general manager, or managing director) provided information on organizational background and the independent variables (e.g., TTS IT affordances and adaptive capability), while a second senior executive (e.g., CFO, financial manager, or marketing manager) responded to questions relating to organizational innovation. All survey items focused on the MCNs' current operations.

Drawing on previous research (Dong & Wang, 2018; Atuahene-Gima et al., 2006; Chung, 2019; Guo et al., 2018; Wang & Chung, 2020), the survey was initially developed in English and then translated into Chinese using a double-translation procedure to ensure semantic accuracy and linguistic consistency (Lee & Chen, 2021; Sun et al., 2018). A pilot study involving six marketing scholars and eight MCN executives was then conducted to refine the questionnaire by improving its readability, clarity, and construct validity (Lee & Chen, 2021). To increase the response rate, follow-up communications were used, supported by endorsements from industry

professors and a Q&A service that addressed participants' questions about the study (Podsakoff et al., 2003). This process yielded 255 responses, of which 229 were retained as valid after incomplete responses were excluded. The final response rate was approximately 20%, which is consistent with benchmarks reported in the literature and is considered adequate for statistical analysis (Bell et al., 2022; Blunch, 2012; Liao et al., 2023).

The final sample spans a wide range of industries, reflecting the broad applicability of MCNs in B2B live streaming. Specifically, the sample includes key B2B sectors such as agriculture, automotive, beauty and personal care, construction, digital media, education, electronics, fashion and apparel, food and beverage, healthcare, home appliances, industrial machinery, real estate, and online-to-offline (O2O) services. This industry diversity strengthens the generalizability of the findings across different B2B digital sectors. Consistent with prior research (Lee & Chen, 2021; Liao et al., 2023), the participating MCNs conducted their B2B live-streaming operations through platforms such as RED, TikTok, Taobao, JD, and B2B online trading sites such as 1688.com.

4.4.2. Measurement Scale

The measurement scales were adopted based on the recommendation of existing literature (Dong & Wang, 2018; Chung, 2019; Guo et al., 2018; Wang & Chung, 2020; Atuahene-Gima et al., 2006). The items for all research variables have been validated by prior studies with robust reliability and validity, supporting their applicability in analyzing MCNs' TTS IT affordances, adaptive capabilities, and organizational innovation.

TTS IT affordances: The measurement items of TTS IT affordances have been utilized in the context of online social e-commerce in China (e.g., Dong & Wang, 2018; Sun et al., 2018). This is measured using a 7-point Likert scale (1 = *strongly disagree;* 7 = *strongly agree*) to capture MCNs' perceptions of these affordances (Dong & Wang, 2018; Saffanah et al., 2022; Sun et al., 2018). Consistent with affordance theory, TTS IT affordance is conceptualized as a formative construct composed of triggered attending, trading, and social connecting affordances (Yang et al., 2025). Detailed assessment procedures for the formative specification are reported in Table 4.2.

Adaptive capability: Our study assesses adaptive capability using a 7-point Likert scale based on prior validated research in China (Guo et al., 2018). This scale measures three dimensions: vigilant market capability, adaptive

market experimentation capability, and open marketing capability (*1 = far below competitors; 7 = far above competitors*), reflecting MCNs' marketing capability to market shifts.

Organizational innovation: Organizational innovation was measured using a multi-dimensional scale capturing the degree to which MCNs introduce new or significantly improved products/services, processes, and administrative practices (Atuahene-Gima et al., 2006; Wang & Chung, 2020). Respondents assessed each item on a 7-point Likert scale *(1 = strongly disagree; 7 = strongly agree)*. Products/services and process innovation were reflected in items that assess the extent to which MCNs introduce new technologies into production and operations, enhance efficiency, and reduce costs through innovative procedures (Atuahene-Gima, 2006). Administrative innovation was reflected in items measuring the degree of novelty in organizational systems and the continuous pursuit of new administrative practices (Atuahene-Gima, 2006). These items collectively represent whether MCNs engage in continuous improvements in technologies, operational routines, and managerial structural changes that are essential for firms operating in dynamic digital B2B environments. This measurement approach aligns with widely used multidimensional conceptualizations of organizational innovation and offers strong validity for evaluating innovation performance in fast-evolving industries (e.g., Damanpour & Aravind, 2011; Petrescu, 2013). It also reflects the kinds of changes MCNs can make to coordinate effectively with upstream principals and downstream business customers in triadic B2B environments (Govindarajan & Kopalle, 2006; Petrescu, 2013).

Control Variable: In this study, we employed six control variables, including market experience, domestic dynamic competitiveness, market segments, industrial ranking, industry specialization, and technical complexity. Existing research has confirmed the effect of market experience on business innovation (*1= not substantial; 7= substantial)* (Hansen, 1992). The market experience is significant because MCNs with longer operational histories may have accumulated innovative knowledge and expertise to influence strategic decisions (Guo et al., 2018). Previous studies have also proven that high competitiveness often requires MCNs to adapt quickly to changing market demands, potentially impacting innovation levels (Chung et al., 2021; Liao et al., 2023). We measured the domestic dynamic competitiveness to reflect the level of competition and volatility within the domestic market (*1=minor change; 7=major change)* (Chung et al., 2021). Moreover, the range of market segments that MCN serves may affect the strategic focus, as firms serving multiple segments may need

to tailor their offerings more diversely (*1=low; 7=high)* (TOPKLOUT, 2025). In addition, the industrial ranking variable measures the relative standing of the MCN within the industry (*1=strongly disagree; 7=strongly agree*) (Gardner & Lehnert, 2016). A higher industry rank may indicate greater influence. This could positively impact the network's ability to innovate and form strategic partnerships (Deephouse, 2000; Gardner & Lehnert, 2016). Likewise, the industry specialization variable captures the extent to which an MCN focuses on specific industries (Gardner & Lehnert, 2016). This can influence the ability to deliver tailored services, enhancing competitive advantage within a niche market (Gardner & Lehnert, 2016). Furthermore, this study captures respondents' perceptions of the technical complexity of an MCN's operational infrastructure using a 7-point Likert scale *(1 = strongly disagree; 7 = strongly agree)* (Lee et al., 2001). Higher technical complexity can increase the firm's adaptive capabilities for innovations and TTS IT affordances operations (Chatterjee et al., 2020; Lee et al., 2001; Uzkurt et al., 2024).

These measurement tools allow a detailed, quantitative analysis of how MCNs leverage TTS IT affordances, adaptive capabilities, and innovation to achieve their competitive advantages. As shown in Tables 2 and 3, each scale is robust and aligned with prior validated measures, ensuring accuracy and consistency in capturing insights of MCNs' B2B operations.

4.4.3. Common method bias assessment

In B2B marketing research, common method bias (CMB) poses a significant methodological challenge as it can affect the validity of results (e.g., Chung, 2019). To address potential CMB issues and improve data accuracy, our study utilized a double-respondent survey method (Chung et al., 2021; Hair et al., 2014). This approach is intended to strengthen the robustness and reliability of findings (Bell et al., 2022). Additionally, we applied the proximal separation method to structure our predictor and criterion variable questions (Podsakoff et al., 2003). This involves utilizing distinct instruments and response formats for each variable type and positioning them in separate sections of this study. These approaches can help to mitigate common method bias and improve data quality (Chung, 2019; Hossain et al., 2022).

4.4.4. Endogeneity tests

Although TTS IT affordances are proposed as an exogenous variable influencing organizational innovation in B2B live-streaming contexts, endogeneity concerns may arise because of potential omitted variable bias and measurement error (Jean et al., 2016; Dong et al., 2016; Zaefarian et al., 2017). To address this issue, the present study adopts an instrumental variable (IV) approach, which is widely recommended in marketing research (e.g., Rahman et al., 2023). A valid IV should directly affect the implementation of TTS IT affordance strategy but should not directly influence MCNs' organizational innovation or correlate with the error term of the model, thereby satisfying the exogeneity requirement (Bascle, 2008; Hult et al., 2018). In this study, regulatory constraints, measured on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), are introduced as the instrumental variable (Cunningham et al., 2019; Xu et al., 2023). Regulatory constraints are expected to significantly influence the implementation of TTS IT affordance strategies by shaping technological adoption and compliance behaviours, while being unlikely to directly affect organizational innovation outcomes. To empirically assess endogeneity, a two-stage least squares (2SLS) regression procedure was employed. The 2SLS results suggest that endogeneity does not pose a significant threat to the proposed relationships (see Appendix H). These findings provide additional support for the robustness and validity of the empirical model.

4.5. Results

4.5.1. Robustness check: Formative operationalization of TTS IT affordances

To further assess the robustness of our findings, we compared formative and reflective specifications of the higher-order TTS IT affordance construct. Prior research has debated whether IT affordances should be modeled as reflective perceptions or as formative bundles of distinct action potentials (Dong et al., 2016; Yang et al., 2025). From a conceptual standpoint, triggered attending, trading, and social connecting affordances represent heterogeneous yet complementary technological action potentials, rather than interchangeable manifestations of a single latent perception (Lee & Cadogan, 2013; Claggett & Karahanna, 2025). Accordingly, changes in one affordance do not necessarily imply proportional changes in the others, which supports a formative specification at the higher-order level. On this basis, we estimated the higher-order TTS IT affordance construct using PLS-SEM in SmartPLS.

Empirically, we also examined the three dimensions of TTS IT affordances—triggered attending, trading, and social connecting—as separate independent variables. The results revealed heterogeneous effects across the hypotheses, with trading affordance and social connecting affordance showing non-significant relationships in certain model specifications (see Appendix I). In contrast, when these three dimensions were modeled jointly as a single higher-order formative construct representing TTS IT affordances, the aggregate construct exhibited stable and significant effects on organizational innovation. This pattern suggests that although each affordance captures a distinct action potential, their innovation effects become more evident when they are considered collectively.

Further, we estimated both formative and reflective higher-order models using PLS-SEM. As reported in Table 4.2, the formative model exhibited stronger and more stable path coefficients, with all interaction effects between TTS IT affordances and adaptive capabilities remaining significant. By contrast, the reflective specification produced weaker coefficients and greater variability across paths, suggesting greater sensitivity to measurement assumptions. Taken together, these findings provide empirical support for conceptualizing TTS IT affordances as a formative construct, in which triggered attending, trading, and social connecting jointly constitute the broader affordance mechanism influencing innovation outcomes.

TABLE 4.2: COMPARISON OF FORMAIVE AND REFLECTIVE MEASUREMENT MODELS OF TTS IT AFFORDANCE

Path	**Original Sample (O)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P Value**	**Result**
Formative model					
TTS IT affordance →Innovation	0.333	0.095	3.497	0.001	Supported
Vigilant Market Capability × TTS IT affordance →Innovation	0.284	0.112	2.539	0.012	Supported
Adaptive Market Experimentation Capability × TTS IT affordance →Innovation	0.284	0.124	2.288	0.023	Supported
Open Marketing Capability × TTS IT affordance →Innovation	0.226	0.105	2.158	0.032	Supported
Reflective model					
TTS IT affordance → Organizational Innovation	0.278	0.126	2.212	0.028	Supported
Vigilant Market Capability × TTS IT affordance →Innovation	0.244	0.102	2.392	0.018	Supported
Adaptive Market Experimentation Capability × TTS IT affordance →Innovation	0.175	0.083	2.098	0.036	Supported
Open Marketing Capability × TTS IT affordance →Innovation	0.222	0.112	1.985	0.048	Supported

4.5.2. Validity and reliability check

The study evaluates the constructs' validity and reliability using IBM AMOS 28.0 and SPSS Statistics 26.0 software. Based on the guidance of existing studies (Blunch, 2012; Wang & Chung, 2020), AMOS statistical analysis is well performed to test the hypotheses and assess the structural model. The results indicate a strong model fit, with values as follows: $\chi 2/df=1.375$, NFI=0.956, IFI=0.937, TLI=0.982, CFI=0.988, and RMSEA=0.041 ($p < 0.01$) (Blunch, 2012).

Confirmatory Factor Analysis (CFA) is further conducted in SPSS to confirm the validity and reliability (Blunch, 2012). The CFA findings demonstrate that the framework has an acceptable fit, facilitating the assessment of hypotheses and examining the relationships between constructs (see Table 4.4) (Blunch, 2012). Reliability is evaluated by Cronbach's Alpha, factor loadings, and variance inflation factor (VIF) values. In our analysis, Cronbach's Alpha values are higher than 0.9, and factor loadings are above the recommended threshold of 0.6, as shown in Table 4.4. They indicate high internal consistency. All VIF values are under 10.0 with acceptable levels of multicollinearity (Blunch, 2012; Wang & Chung, 2020).

Additionally, the composite reliability (CR) values exceed 0.8, and the average variance extracted (AVE) values are greater than 0.6, reinforcing the reliability and convergent validity of the constructs (Hair et al., 2012; Hair et al., 2014). These results collectively indicate high construct validity and reliability in this study. Tables 4.3 and 4.4 provide detailed information on the correlation matrix, reliability, and validity of all measurements.

TABLE 4.3: CORRELATION COEFFICIENTS

	1	2	3	4	5	6	7	8	9	10	11
1. MCN experience in the market	1.000										
2. Changes of domestic competitors	.113	1.000									
3. Number of market segments	.437**	.319**	1.000								
4. MCN's ranking in the industry	.387**	.358**	.275**	1.000							
5. Specialization in some industries	.321**	.166*	.202**	.338**	1.000						
6. Technical complexity	.312**	.183**	.119	.263**	.121	1.000					
7. Vigilant market capability	.303**	.075	.294**	.364**	.157*	.206**	1.000				
8. Adaptive market experimentation capability	.305**	.090	.284**	.420**	.123	.235**	.173**	1.000			
9. Open marketing capability	.292**	.044	.237**	.450**	.191**	.258**	.021	.144*	1.000		
10. TTS IT affordances	.127	-.197**	-.079	.281**	.197**	.180**	.352**	.295**	.379**	1.000	
11. Innovation	.015	.097	.032	.255**	.122	.137*	.002	.010	.059	.287**	1.000

TABLE 4.4: CONSTRUCT'S INFORMATION

Model Constructs	Chinese MCN enterprises (N = 229)				
	Mean Values	Factor Loading	Cronbach's Alpha	CR	AVE
TTS IT affordance[a]	5.41		0.968	0.965	0.712
Triggered Attending Affordance[a]			0.980	0.954	0.838
Our live streaming approach informs viewers of product upgrades in a timely fashion	5.41	0.894			
Our live streaming approach informs viewers of product improvements in a timely fashion	5.43	0.923			
Our live streaming approach informs viewers of any changes to products of interest in a timely fashion	5.44	0.919			
Our live streaming approach informs viewers of new product promotion information in a timely fashion	5.38	0.925			
Trading Affordance[a]			0.958	0.928	0.810
Our live streaming approach offers multiple payment options to complete a purchase (e.g., Alipay, WeChat Wallet and credit card)	5.68	0.898			
Our live streaming on the platform can effectively lead to a transaction	5.62	0.915			
Our live streaming on the platform enables customers to complete a transaction smoothly	5.67	0.887			
Social Connecting Affordance[a]			0.919	0.885	0.660
Our live streaming approach can connect with streamers who can offer viewers detailed product information by introducing them to other customers	5.37	0.870			
Our live streaming approach enables viewers to make friends with streamers they have never met	5.28	0.842			
Our live streaming approach enables viewers to get product information through connections with streamers	5.24	0.849			
Our live streaming approach enables viewers to connect with other streamers to buy products together	4.98	0.673			
Adaptive capability[b]					
Vigilant Market Capability[b]			0.973	0.981	0.926
Our firm is highly sensitive to the market environment and is able to detect market signals (even the weak ones) timely and accurately	5.04	0.970			
Our firm actively collects extensive marketing information through all social networks and media	5.07	0.971			
Our firm is able to forecast market trends based on past histories of consumer demand	5.02 5.04	0.962			
New market information is shared within the company and distributed to different divisions in a timely manner	5.04	0.946			
Adaptive Market Experimentation Capability[b]			0.967	0.961	0.860
Our firm is willing to actively conduct market experiments or tests based on our own market forecast	4.90	0.949			
Through trial and error and experimenting, our firm explores future market trends and develops potentially successful business models	4.96	0.959			
Our firm takes advantage of emerging technologies, such as the Internet, quick-response technologies, and database technologies to track market changes and learn from market experiments	4.98	0.961			
Our firm actively learns from a wider range of peer companies, market leaders, and channel partners	4.99	0.947			

Open Marketing Capability[b]			0.963	0.981	0.929
Our firm actively seeks a strategic partnership with companies that are complementary with our firm in terms of resources and capabilities	4.86	0.951			
Through coordination and collaboration with our partners, we are able to achieve synergy in effectively and quickly respond to market signals (even the weak ones)	4.87	0.957			
Through resource integration with our partners, our firm gains the capabilities for continuous product and technology innovation	4.84	0.950			
Through collaboration and coordination with our partners, our firm improves the capability in developing innovative strategies and tactics	4.91	0.927			
Organizational innovation[a]			0.988	0.987	0.916
We constantly introduce new technology in the production and operation	5.11	0.964			
Our production tends to be more efficient	5.16	0.973			
Our costs tend to be lower as a result of process innovation	5.11	0.971			
Our operational process tends to be more efficient	5.11	0.960			
We have a large number of changes in process introduced	5.06	0.959			
Our novelty of administrative system is high	5.10	0.963			
We always search for new administrative systems	5.11	0.967			

Notes: [a]measured by seven-point scale (1= Strongly disagree; 7= Strongly agree); [b]measured by seven-point scale (1= Far below the competitors; 7= Far above the competitors); [c]measured by seven-point scale (1= Limited; 7= Extensive).

4.5.3. Regression analysis results

Our study applied hierarchical regression analysis to test the research hypotheses (Blunch, 2012). To minimize multicollinearity and enhance result accuracy, we used a mean-centering technique (Blunch, 2012; Chung et al., 2021). In the regression setup, Model 1 includes six control variables. Model 2 incorporates moderators and independent variables, including adaptive capabilities and TTS IT affordances constructs. Model 3 further includes interaction values of TTS IT affordances and each adaptive capability. Our dependent variable is the organizational innovation.

The findings related to organizational innovation are presented in Table 4.5. All VIF values are below 10.0, indicating that multicollinearity is not a significant issue in this study (Blunch, 2012; Chung, 2019). The results suggest that TTS IT affordances positively impact organizational innovation (β=0.290, $p<0.01$), thereby supporting H1. Additionally, the regression analysis confirms the moderating effect of adaptive capabilities (see Table 4.5). Specifically, vigilant market capability shows a significant positive moderating effect on the relationship between TTS IT affordances and organizational innovation of MCNs (β=0.207, $p<0.05$), providing support for H2. Furthermore, the positive moderating role of adaptive market experimentation capability in the TTS IT affordances and organizational innovation relationship is also confirmed (β=0.265, $p<0.05$), thus supporting H3. Moreover, the positive moderating impact of open marketing capability within the TTS IT affordances and organizational innovation framework is validated (β=0.258, $p<0.05$), indicating support for H4.

TABLE 4.5: REGRESSION RESULTS OF ORGANIZATIONAL INNOVATION

			Innovation
	M1 β	M2 β	M3 β
Control variables			
Experience in the market	-0.143#	-0.123	-0.145*
Changes in domestic competitors	-0.015	0.063	0.087
Number of market segments	0.005	0.091	0.087
MCN's ranking in the industry	0.266**	0.223**	0.265**
Specialization in some specific industry	0.066	0.011	-0.064
Technical complexity	0.101	0.072	-0.051
Independent variables			
Vigilant market capability		-0.158	-0.088
Adaptive market experimentation capability		-0.104	-0.247#
Open marketing capability		0.047	-0.017
TTS IT affordances (H1, S)		0.319**	0.556**
Interactions			
TTS IT affordances × Vigilant market capability (H2, S)			0.200*
TTS IT affordances × Adaptive market experimentation capability (H3, S)			0.260*
TTS IT affordances × Open marketing capability (H4, S)			0.249*
R^2 value	0.086**	0.171**	0.553**
Adjusted R^2 value	0.061**	0.133**	0.526**
R^2 value change	0.086**	0.085**	0.386**
F value	3.472**	4.469**	10.357**

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 10.0.
S = supported; NS = not significant. (N = 229)

4.6. Discussion and research implications

The purpose of this study was to advance understanding of how innovation emerges within B2B live-streaming ecosystems by examining MCNs as midstream coordinators embedded in triadic structures linking upstream principals and downstream business customers (Vedel et al., 2016; França et al., 2022). To do so, the study integrates affordance theory (e.g., Gibson, 1977; Volkoff & Strong, 2013; Dong & Wang, 2018) with the dynamic capability view (e.g., Teece et al., 1997; Day & Boisi, 2011; Hunt & Madhavaram, 2020) into a cohesive framework.

Empirically, the findings show that TTS IT affordances positively enhance organizational innovation within MCNs (Majchrzak & Markus, 2013; Volkoff & Strong, 2013). Moreover, the results provide evidence that three adaptive capabilities—vigilant market capability, adaptive market experimentation capability, and open marketing capability—positively moderate the relationship between TTS IT affordances and organizational innovation (Day & Boisi, 2011; Hunt & Madhavaram, 2020; Palmié et al., 2023). Taken together, these findings advance B2B innovation research and offer practical guidance for MCNs seeking to leverage TTS IT affordances and adaptive capabilities to drive innovation across triadic partnerships (Vedel et al., 2016; Frandsen & Johansen, 2018).

4.6.1. Theoretical implications

This study makes several theoretical contributions to B2B innovation research, digital affordance scholarship, and the literature on dynamic capabilities in B2B live-streaming ecosystems (Volkoff & Strong, 2013; Teece et al., 1997; Day & Boisi, 2011; Chung, 2019).

First, by highlighting MCNs as midstream coordinators embedded in triadic structures, this study advances B2B innovation research. Prior research has often conceptualized innovation as a firm-centric and internally driven process (e.g., Crossan & Apaydin, 2010; Wang & Ahmed, 2004). In contrast, the findings show that innovation in B2B live-streaming ecosystems emerges from how MCNs negotiate and orchestrate interdependencies across upstream principals, platform structures, and downstream business customers (Vedel et al., 2016; Frandsen & Johansen, 2018). In doing so, the study extends existing innovation theory by showing that innovation is not solely a function of internal capabilities, but also a relational and coordination-based outcome shaped by MCNs' structurally coupled position within the B2B ecosystem (Damanpour & Aravind, 2011; Corsaro & Snehota, 2011; Anderson & Robey, 2017).

Second, this study advances affordance theory by clarifying how TTS IT affordances function within organizational and ecosystem contexts. In particular, it moves the application of affordance theory beyond its traditional focus on individual-level use toward a more organizational and ecosystem-based perspective (e.g., Leonardi, 2011; Dong & Wang, 2018), showing that affordances become consequential when aligned with the relational demands of B2B live-streaming ecosystems. Rather than treating IT affordances as static technological features, the findings show that they operate as organizational action potentials whose innovative value depends on how MCNs enact them within midstream coordination routines (Volkoff & Strong, 2013; Yang et al., 2025). This insight underscores that affordances must be perceived, interpreted, and mobilized by organizations, rather than assumed to produce inherent or automatic effects (Leonardi, 2011; Strong et al., 2014). By examining triggered attending, trading, and social connecting affordances as TTS IT affordances within MCNs, the study broadens the applicability of affordance theory beyond individual-level user interactions and positions it more firmly within research on B2B digital innovation (Dong & Wang, 2018; Hua et al., 2023; Saffanah et al., 2022).

Third, this study contributes to the dynamic capability view by demonstrating that vigilant market capability, adaptive market experimentation capability, and open marketing capability are distinct mechanisms that shape whether and how MCNs translate TTS IT affordances into organizational innovation (Day & Boisi, 2011; Teece, 2007). These adaptive capabilities correspond to different aspects of the sensing–seizing–reconfiguring processes emphasized in the dynamic capability view, thereby shaping how MCNs recognize, evaluate, and transform the action potentials embedded in TTS IT affordances into innovation outcomes (Teece et al., 1997; Teece, 2007). Collectively, the findings extend dynamic capability research by showing how adaptive capabilities function as contingent factors that positively moderate the relationship between TTS IT affordances and organizational innovation (Wang & Ahmed, 2007). The study also offers new insight into how digital innovation emerges within triadic intermediaries such as MCNs, whose sensing, seizing, and reconfiguring activities may differ from those of conventional firms (Franssen et al., 2020; Vedel et al., 2016). Future research may build on these insights by incorporating adaptive capabilities into broader examinations of organizational

adaptability, strategic agility, and B2B ecosystem challenges, alongside factors such as TTS IT affordances, MCN coordination roles, and organizational innovation (Chung, 2019; Teece et al., 2016).

Finally, this study contributes by integrating affordance theory and the dynamic capability view into a cohesive framework for understanding digital innovation in triadic B2B ecosystems. While affordance theory explains how technological features create action potentials (Gibson, 1977; Volkoff & Strong, 2013), and dynamic capability theory explains how firms sense, seize, and reconfigure opportunities under environmental turbulence (Teece et al., 1997; Eisenhardt & Martin, 2000), these perspectives have rarely been combined in B2B research. By bringing them together, this study shows that technological affordances do not independently generate innovation; rather, their innovative value emerges when they are mobilized through adaptive capabilities that enable sensing, interpreting, and reconfiguring activities within triadic relationships (Day & Boisi, 2011; Teece, 2007). This integrated lens advances theory by illustrating how and under what conditions affordances lead to innovation, offering a more complete account of digital transformation in midstream intermediaries such as MCNs (Franssen et al., 2020; Vedel et al., 2016). It also provides a conceptual foundation for future research examining the interplay between digital affordances and organizational capabilities in B2B e-commerce environments (Vedel et al., 2016; Palmié et al., 2023).

Taken together, this study enriches B2B innovation research by showing how MCNs transform technological possibilities into innovation outcomes through triadic coordination routines. By unifying affordance theory with the dynamic capability view, the study offers a theoretically grounded account of how MCNs mobilize TTS IT affordances through adaptive capabilities within triadic coordination processes (Wang & Ahmed, 2007; Vedel et al., 2016). This integrated perspective provides a platform for future research on how digital intermediaries reshape B2B ecosystems and highlights the importance of examining innovation processes within the broader relational and structural dynamics of triadic markets (Damanpour & Aravind, 2011; Anderson & Robey, 2017).

4.6.2. Managerial implications

The findings of this study offer several actionable insights for managers operating in MCNs and other B2B digital organizations. First, the results highlight the critical role of TTS IT affordances—triggered attending, trading, and social connecting—in enabling organizational innovation in MCNs' B2B operations (Dong & Wang, 2018; Volkoff & Strong, 2013; Sun et al., 2019). Managers of digital intermediaries such as MCNs should move beyond the passive use of platform features and instead develop deliberate operational routines around these affordances. In practical terms, this involves investing in real-time data analytics systems to support accurate triggered attending notifications, deploying secure and flexible transaction infrastructures to strengthen trading affordances, and adopting interactive communication tools to enhance social connecting functions (Song et al., 2021; Liao et al., 2023). By institutionalizing these practices, MCN managers can respond more quickly to upstream principal demands, reduce friction in downstream coordination, and deliver more innovative live-streaming solutions in dynamic B2B markets.

Second, the study shows that adaptive capabilities—vigilant market capability, adaptive market experimentation capability, and open marketing capability—significantly strengthen the innovation effects of TTS IT affordances (Day & Boisi, 2011; Hunt & Madhavaram, 2020; Ali et al., 2022). Accordingly, MCN managers should

prioritize capability-building initiatives that enhance sensing, experimentation, and collaborative responsiveness in dynamic B2B environments. Strengthening vigilant market capability requires managers to navigate rapidly shifting customer expectations, volatile product cycles, and increasing demands from upstream principals (Day & Boisi, 2011). To do so, managers should establish systematic market-scanning routines, such as real-time monitoring dashboards, competitor intelligence reviews, and continuous customer feedback analysis, in order to improve responsiveness to environmental change (Reimann et al., 2021; Liao et al., 2023). By institutionalizing vigilance through dedicated roles or cross-functional insight teams, MCNs can dynamically adjust content delivery, promotional timing, and transactional flows, ensuring that affordance enactments remain aligned with evolving downstream demand and upstream priorities (Day & Boisi, 2011; Guo et al., 2018).

Third, MCN managers should cultivate adaptive market experimentation capability, as static routines quickly become obsolete in fast-changing B2B live-streaming contexts (Hunt & Madhavaram, 2020; Day & Boisi, 2011). Organizations can strengthen this capability by promoting structured iterative learning, such as A/B testing new content formats, piloting alternative payment or logistics solutions, and trialing new engagement scripts enabled by social connecting affordances (Eisenhardt & Martin, 2000; Rahmah et al., 2020). This also requires the establishment of experimentation sandboxes, cross-functional testing teams, and routines for evaluating experimental outcomes (Mangiaracina et al., 2019; Mao et al., 2022). These mechanisms enable MCNs to seize emerging opportunities more effectively by refining IT affordance use on the basis of evidence rather than assumptions, thereby supporting continuous innovation in organizational practices (Kimberly & Evanisko, 1981; Hunt & Madhavaram, 2020).

Finally, MCN managers should strengthen relational ties with upstream principals, downstream B2B customers, and platform partners in order to co-create solutions and refine affordance-enabled processes (He et al., 2022; Pinkse & Bohnsack, 2021). This can be achieved by organizing joint planning sessions, establishing shared data dashboards with partners, and institutionalizing mechanisms for routine knowledge exchange (Sima et al., 2024; Venters et al., 2014; Anderson & Robey, 2017). Open collaboration enables MCNs to redesign workflows and service offerings based on distributed expertise across the triad (Konsti-Laakso et al., 2012; Wang & Chung, 2020). Such practices equip MCNs to remain flexible and continuously innovate in response to market shifts, platform evolution, and the strategic expectations of upstream principals.

4.7. Limitations and future research directions

Our study has several limitations that future research could address to enhance its contributions. First, this study primarily uses a quantitative research approach. This methodology may limit the depth of insights into the complex relationship between TTS IT affordances and organizational innovation. Future research could benefit from employing a mixed-method approach, combining quantitative surveys with qualitative methods such as interviews or case studies to gain a more comprehensive understanding of the mechanisms behind TTS IT affordances in the MCN industry (Hua et al., 2023; Wang et al., 2022). Second, our study captures a snapshot of the relationship between TTS IT affordances and B2B organizational innovation within a specific period. However, the B2B live streaming industry is highly dynamic, with rapid technological advancements and changing market demands. Longitudinal studies would help track the evolving impact of TTS IT affordances over time, providing insights into how these relationships change as technology and market conditions develop

(Bell et al., 2022). Third, our study is geographically limited to MCNs operating in China. While this context provides valuable insights given China's leadership in the B2B live-streaming economy, cultural, institutional, and technological factors may vary across countries. In addition, some of the measures used in this study rely on respondents' self-assessments and reflections, such as their perceptions of organizational capabilities and technological sophistication, which may introduce subjective bias. Future research should examine B2B digital organizations in other national settings or adopt a cross-country comparative design to evaluate the generalizability and contextual contingencies of our findings across different B2B digital ecosystems (Kittur & Agarwal, 2024).

Chapter 5

Conclusion and Synthesis

5.1. Summary of findings

The central purpose of this thesis was to investigate how MCNs in the emerging B2B live streaming industry enhance business performance and organizational innovation through the application of live streaming strategies and organizational capabilities. As digital commerce continues to expand and live streaming becomes increasingly embedded in B2B transactions, understanding how firms leverage digital technologies and organizational resources to gain competitive advantage has become an important research issue. This thesis addresses this issue by examining how relational strategies, IT affordances, and organizational capabilities interact to influence performance and innovation outcomes within B2B live-streaming ecosystems. This research comprises three empirical studies that collectively explore the mechanisms through which MCNs achieve competitive advantage in digitally mediated B2B environments. Together, these three empirical papers provide a multi-theoretical and empirically grounded analysis of how MCNs in emerging markets strategically enact digital technologies and organizational capabilities to enhance performance and maintain innovation in B2B live streaming commerce.

With regards to RQ1, the thesis investigates how relational bonds strategies and different types of IT affordances influence MCNs' B2B performance and innovation outcomes. Paper 1 focuses on relational bonds strategies, including financial bonds, social bonds, and structural bonds, and their impact on strategic and financial performance. Drawing on the resource-based view (RBV), relational bonds are conceptualised as valuable organizational resources that strengthen long-term relationships with business partners (Alagarsamy et al., 2021; Barney, 1991; Do et al., 2022). The empirical results of Paper 1, based on survey data collected from 211 MCN firms, show that relational bonds significantly improve both strategic and financial performance (Berry & Parasuraman, 2004). Paper 2 extends this analysis by examining visibility, meta-voicing, and guidance shopping affordances (hereafter VMG IT affordances). The findings suggest that these IT affordances contribute positively to both channel performance and economic performance. These affordances enable firms to enhance operational transparency, facilitate communication among ecosystem partners, and support interactive engagement with business customers. Therefore, the findings show that VMG IT affordances can improve coordination and responsiveness within B2B live-streaming ecosystems (Majchrzak et al., 2013; Volkoff & Strong, 2013). Paper 3 investigates another category of IT affordances, including triggered attending, trading, and social connecting (namely TTS IT affordances), and their influence on organizational innovation. The results indicate that, through TTS IT affordance mechanisms, MCNs are better able to develop new organizational practices and respond to changing market conditions, thereby improving their innovative outcomes (Faraj & Azad, 2012; Gibson, 1977).

In addition to examining these direct effects, this thesis also considers the role of organizational capabilities in shaping the effectiveness of these live streaming strategies. Paper 1 finds that exploratory learning capability strengthens the relationship between relational bonds and B2B performance, whereas exploitative learning capability weakens this relationship. These findings provide evidence for RQ2, suggesting that different types of organizational learning capability influence how relational bonds translate into performance outcomes (Atuahene-Gima & Murray, 2007; March, 1991). Paper 2 further examines how organizational capabilities interact with

digital affordances. The results show that exploratory learning capability and business networking capability strengthen the relationship between VMG IT affordances and B2B channel and economic performance. In contrast, exploitative learning capability has a negative moderating effect. These findings address RQ3, highlighting the importance of both learning processes and external networks in enabling firms to leverage digital affordances effectively (Chung & Ho, 2021; Mitrega et al., 2012; Ritter & Gemünden, 2003). Finally, Paper 3 shows that adaptive capabilities, including vigilant market capability, adaptive market experimentation capability, and open marketing capability, positively moderate the relationship between TTS IT affordances and organizational innovation. Firms that possess stronger adaptive capabilities are better able to recognise opportunities created by digital technologies and translate these opportunities into innovative practices. This finding provides an answer to RQ4, demonstrating that adaptive capabilities play an important role in enabling firms to convert IT affordances into B2B innovative outcomes (Day & Schoemaker, 2016; Teece et al., 1997).

Overall, the results suggest that competitive advantages in B2B live-streaming ecosystems arise not simply from the possession of relational resources or digital technologies but from firms' ability to combine and deploy these resources effectively. This thesis therefore provides a broader understanding of how MCNs operate within rapidly evolving digital commerce environments.

5.2. Theoretical contributions

First, this thesis contributes to the RBV by extending the conceptualisation of relational bonds as strategic resources within digital B2B live-streaming environments. While RBV has long emphasised the role of valuable, rare, inimitable, and non-substitutable resources in generating sustainable competitive advantage (Barney, 1991), most empirical research has focused on internal organizational resources or traditional relationship marketing contexts. In contrast, this thesis demonstrates that relational bonds strategies, comprising financial bonds, social bonds, and structural bonds, function as critical relational resources that enhance MCNs' B2B strategic and financial performance (Alagarsamy et al., 2021; Do et al., 2022). By empirically examining relational bonds within the B2B live-streaming ecosystem, this study extends the RBV literature in two important ways. First, it highlights the strategic importance of relational resources in digitally mediated B2B environments where interactions occur through technology-enabled platforms. This research therefore broadens the application of RBV by illustrating how relational bonds resources operate as strategic assets within emerging digital commerce ecosystems.

Second, this thesis advances affordance theory by extending its application from consumer-oriented digital environments to B2B live-streaming ecosystems. Previous affordance research has primarily examined how technological features influence individual user behaviour, particularly in relation to consumer engagement and online purchasing decisions (Faraj & Azad, 2012; Gibson, 1977). However, limited research has investigated how IT affordances influence firm-level outcomes in B2B digital markets. This research addresses this gap by examining two distinct categories of IT affordances within live-streaming platforms: VMG IT affordances (visibility, meta-voicing, and guidance shopping) and TTS IT affordances (triggered attending, trading, and social connecting). The findings demonstrate that these affordances generate different organizational outcomes. VMG IT affordances primarily improve B2B performance by enhancing transparency, communication, and decision support within digital interactions (Majchrzak et al., 2013; Volkoff & Strong, 2013), while TTS affordances play

a more important role in facilitating organizational innovation by enabling experimentation, real-time engagement, and collaborative value creation (Faraj & Azad, 2012). By distinguishing between these two types of IT affordances and identifying their differentiated strategic roles, this thesis enriches affordance theory by demonstrating that IT affordances can influence organizations through multiple strategic pathways. This contribution advances the theoretical understanding of how IT affordances can create value in complex organizational ecosystems.

Third, this thesis contributes to the literature on organizational learning and dynamic capabilities by demonstrating the contingent role of organizational capabilities in leveraging relational bond resources and IT affordances. Existing dynamic capability research emphasises that firms must continuously sense opportunities, seize them through strategic actions, and reconfigure resources to maintain competitiveness in rapidly changing environments (Teece, 2007; Teece et al., 1997). However, empirical research examining how specific organizational capabilities interact with relational strategies and digital technologies remains limited. This research demonstrates that organizational learning capabilities play a critical role in shaping how firms leverage relational and technological resources. In particular, exploratory learning capability strengthens the positive impact of relational bonds and IT affordances on performance outcomes, while exploitative learning capability weakens these relationships (Atuahene-Gima & Murray, 2007; March, 1991). These findings highlight the importance of learning orientation in determining whether firms can effectively leverage strategic resources in dynamic digital environments. By integrating RBV with organizational learning theory and dynamic capability perspectives, this research provides a more comprehensive explanation of how firms convert relational and technological resources into business performance advantages in B2B digital ecosystems.

Fourth, this thesis contributes to organizational capability research by highlighting the strategic importance of business networking capability and adaptive capability in digitally mediated B2B environments. In B2B live-streaming ecosystems, firms operate within complex multi-actor networks involving suppliers, platforms, and business customers. As a result, the ability to coordinate relationships and adapt to rapidly changing market conditions becomes critical for achieving competitive advantage (Mitrega et al., 2012; Ritter & Gemünden, 2003). The findings show that business networking capability strengthens the relationship between VMG IT affordances and B2B performance by enabling firms to access external resources, coordinate with ecosystem partners, and enhance collaborative value creation. At the same time, adaptive capabilities play an important role in transforming digital affordances into innovation outcomes. Firms with stronger adaptive capabilities are better able to sense emerging market opportunities, experiment with new coordination practices, and reconfigure organizational routines to support innovation (Day & Schoemaker, 2016; Teece et al., 1997).

Finally, this thesis contributes to the emerging literature on B2B live-streaming commerce and the strategic role of MCNs in digital ecosystems. While previous research on live streaming has largely focused on consumer markets, relatively little attention has been paid to the role of MCNs in B2B contexts. This research addresses this gap by conceptualising MCNs as midstream intermediaries that coordinate interactions among upstream suppliers, digital platforms, and downstream business customers (Liao et al., 2023; Xue & Liu, 2022). By examining how MCNs leverage relational bonds strategies, VMG and TTS IT affordance strategies, and organizational capabilities to improve performance and innovation outcomes, this research provides new insights into how digital

intermediaries create value in complex B2B ecosystems. In particular, the study highlights the strategic role of MCNs as ecosystem orchestrators that integrate relational resources, technological capabilities, and organizational processes to facilitate coordination and value creation across multiple actors. This perspective advances existing research on B2B digital marketing and platform ecosystems by providing a deeper understanding of how firms operate within triadic digital environments involving multiple stakeholders.

Taken together, these contributions provide a more integrated theoretical understanding of how live-streaming strategies and organizational capabilities jointly influence firm performance and innovation in B2B live-streaming ecosystems. Rather than viewing these factors as independent drivers of competitive advantage, this thesis demonstrates that superior outcomes emerge when firms effectively combine relational resources, IT affordances, and organizational capabilities. This integrated perspective advances existing theories by highlighting the importance of capability orchestration in digitally mediated B2B markets.

5.3. Managerial implications

The findings of the three empirical studies provide several practical implications for managers and organizations operating in the B2B live-streaming industry, particularly MCNs and other midstreaming businesses. While each study focuses on a different strategic mechanism, including relational bonds strategies (Paper 1), VMG IT affordances (Paper 2), and TTS IT affordances (Paper 3), the overall findings highlight an important managerial insight: the effectiveness of live-streaming strategies depends not only on the deployment of digital technologies but also on the development of complementary organizational capabilities (Day, 1994; Teece, 2007). Managers therefore need to align relational bonds strategies, IT affordances, and organizational capabilities to fully realise the potential of B2B live-streaming commerce.

First, the findings highlight the importance of relational bonds strategies in strengthening relationships between MCNs and their B2B partners, such as wholesalers, distributors, and resellers. Financial, social, and structural bonds can significantly improve both strategic and financial performance by enhancing trust, reducing transaction uncertainty, and facilitating long-term collaboration (Berry & Parasuraman, 2004; Hu & Chaudhry, 2020). For managers, this implies that B2B live streaming should not be treated merely as a sales channel but as a relationship-building platform. Managers should therefore design live-streaming activities that encourage deeper interaction with business customers, including transparent product demonstrations, real-time negotiations, and personalised communication. In addition, the findings suggest that relational bonds are particularly valuable in digitally mediated environments where traditional face-to-face interactions are limited (Alagarsamy et al., 2021; Do et al., 2022). By leveraging live-streaming technologies to strengthen relational ties, MCNs can build more stable partnerships and create long-term business value for both suppliers and downstream partners.

Second, this research highlights the importance of effectively leveraging digital affordances embedded in live-streaming platforms. The findings of Paper 2 demonstrate that VMG IT affordances can significantly improve channel coordination and economic performance. This suggests that these IT affordances allow firms to enhance operational transparency, facilitate communication across partners, and provide more informative purchasing experiences for B2B customers (Majchrzak et al., 2013; Volkoff & Strong, 2013). For managers, this suggests that investments in live-streaming technologies should go beyond basic broadcasting functions. Instead, firms

should develop digital infrastructures that support interactive communication, transparent information sharing, and collaborative decision-making. Such capabilities enable MCNs to coordinate activities more effectively across their supply networks and improve overall business performance. Furthermore, managers should recognise that the strategic value of IT affordances lies not only in technological functionality but also in how these technologies are integrated into organizational processes. Firms that successfully embed these affordances into their operational routines are more likely to achieve sustained performance improvements (Dong & Wang, 2018).

Third, the findings emphasise that organizational capabilities play a crucial role in determining whether live-streaming strategies translate into performance outcomes. In particular, exploratory learning capability enhances firms' ability to experiment with new digital practices and leverage relational and technological resources effectively (Atuahene-Gima & Murray, 2007; March, 1991). Thus, managers should foster organizational cultures that encourage experimentation, knowledge acquisition, and continuous learning. The results also indicate that excessive reliance on exploitative learning may limit firms' ability to adapt to rapidly changing digital environments (Chung & Ho, 2021). Managers should therefore balance efficiency-driven routines with exploratory activities to maintain organizational flexibility. In addition, the findings highlight the importance of business networking capability in digitally mediated B2B markets. Firms that maintain strong relationships with ecosystem partners are better able to access external resources, share knowledge, and coordinate activities across the value chain (Mitrega et al., 2012; Ritter & Gemünden, 2003). Therefore, managers should actively cultivate trust-based partnerships with suppliers, platforms, and downstream distributors to maximise the benefits of digital technologies. Additionally, adaptive capabilities emerge as vital enablers of digital resource effectiveness. Managers should invest in building vigilant market sensing, agile experimentation, and open marketing practices (Day & Schoemaker, 2016; Teece et al., 1997). These capabilities allow MCNs to identify emerging opportunities, respond quickly to environmental changes, and fully harness the innovation potential of TTS IT affordances.

Finally, this research highlights the strategic role of MCNs as ecosystem orchestrators within B2B live-streaming markets. MCNs operate as intermediaries connecting upstream suppliers, digital platforms, and downstream business customers. As such, their competitive advantage depends on their ability to coordinate resources and activities across multiple actors (Liao et al., 2023; Xue & Liu, 2022). Managers should therefore adopt an ecosystem perspective when developing live-streaming strategies. Rather than focusing solely on firm-level capabilities, MCNs should actively facilitate collaboration among suppliers, platforms, and distributors. By acting as coordinators of information, relationships, and digital resources, MCNs can create greater value for all participants in the ecosystem.

Overall, the findings suggest that firms operating in B2B live-streaming markets should adopt a holistic strategic approach that integrates live-streaming strategies and organizational capabilities. Managers who successfully align these elements will be better positioned to improve business performance, foster innovation, and sustain competitive advantage in rapidly evolving digital commerce environments.

5.4. Limitations and future research

Although this thesis provides important insights into how live-streaming strategies and organizational capabilities influence MCNs' performance and innovation outcomes in B2B live-streaming ecosystems, several limitations should be acknowledged. These limitations also provide opportunities for future research.

First, this research focuses specifically on MCNs operating within China's B2B live-streaming industry. While China represents one of the most advanced and rapidly evolving live-streaming markets, the institutional environment, digital infrastructure, and platform ecosystems in this context may differ from those in other regions. In particular, Chinese live-streaming platforms are often closely integrated with e-commerce functions such as payment, ordering, and transaction support (Liao et al., 2023), whereas platforms in some Western markets may provide live-streaming capabilities without the same degree of embedded commercial functionality. As a result, the generalisability of the findings may be limited when applied to other countries or digital markets. Future research could extend this line of inquiry by examining B2B live-streaming ecosystems in different institutional contexts, such as Western markets or other emerging economies. Comparative studies across countries may provide valuable insights into how institutional environments and digital infrastructures influence the effectiveness of live-streaming strategies and organizational capabilities (Liao et al., 2023; Xue & Liu, 2022).

The generalisability of the findings may also differ across B2B digital industries. This thesis examines MCNs in a B2B live-streaming context where product demonstration, real-time communication, information visibility, and transaction support are important. These characteristics may make the findings more applicable to B2B digital industries in which products or services can be effectively presented online and where buyers value direct explanation, interaction, and channel coordination. However, the role of MCNs may be more constrained in B2B industries that are highly regulated, less digitally developed, or strongly dependent on offline negotiation and established personal relationships. In these settings, live-streaming strategies may not operate in the same way, and organizational capabilities may have different effects on B2B performance and innovation. Future research could compare MCN-led B2B live-streaming practices across different B2B digital industries to clarify the boundary conditions of the framework.

Second, the empirical studies in this thesis rely primarily on cross-sectional survey data collected from MCN firms. Although this approach provides useful insights into the relationships among relational bonds strategies, IT affordances, organizational capabilities, and performance outcomes, cross-sectional data may limit the ability to capture dynamic processes over time. Organizational capabilities and digital strategies often evolve as firms accumulate experience and adapt to changing market environments. Future research could therefore adopt longitudinal research designs to examine how live-streaming strategies and organizational capabilities develop over time and influence firm performance in dynamic digital ecosystems (Bell et al., 2022; Podsakoff et al., 2012).

Third, the measures in this thesis mainly use perceptual survey responses provided by managers within MCN organizations. Although such measures are commonly used in strategic management and marketing research, perceptual data may be subject to potential response bias. This concern is particularly relevant for constructs related to firms' technological development or digital sophistication, where managerial assessments may not fully capture objective technological conditions. Future research could complement survey data with objective performance indicators, such as transaction records, platform-level engagement metrics, or financial performance

data. The integration of multiple data sources would allow researchers to obtain a more comprehensive understanding of digital business ecosystems and reduce potential measurement bias.

Fourth, this thesis focuses on several key organizational capabilities, including exploratory learning capability, exploitative learning capability, business networking capability, and adaptive capability. While these capabilities are grounded in the resource-based view and dynamic capability perspectives (Teece, 2007; Teece et al., 1997), other organizational factors may also influence the effectiveness of live-streaming strategies. Future research could examine additional organizational capabilities, such as digital transformation capability, platform governance capability, or data analytics capability, which may further enhance firms' ability to leverage digital technologies in B2B platform ecosystems.

Fifth, this thesis primarily examines MCNs as focal organizations within B2B live-streaming ecosystems. However, these ecosystems involve multiple actors, including upstream suppliers, platform operators, influencers, and downstream business customers. The interactions among these actors may shape how relational bonds strategies and IT affordances generate value. Future research could therefore adopt a broader ecosystem perspective by examining the roles and strategies of different actors within the B2B live-streaming ecosystem. For example, future studies could investigate how platform governance mechanisms influence relational strategies, or how collaboration among MCNs, suppliers, and distributors shapes innovation outcomes in digital commerce environments.

Last, this thesis acknowledges the limitations of MCNs as intermediaries in the B2B live-streaming ecosystem. Although MCNs are positioned as midstream orchestrators, this orchestration role is performed through their intermediary position between suppliers, platforms, content creators, and B2B customers. MCNs can support product presentation, information exchange, real-time interaction, and transaction facilitation, but they do not fully control all the conditions that shape B2B outcomes. For example, product quality and supply reliability are largely determined by upstream suppliers, traffic visibility is influenced by platform algorithms and governance rules, and final purchasing decisions remain with B2B customers. Therefore, the effects of MCNs' relational strategies, IT affordances, and organizational capabilities may be strengthened or constrained by other actors in the wider ecosystem. This suggests that MCNs should be understood as active intermediaries whose value-creation role depends not only on their own capabilities, but also on the resources, credibility, and responsiveness of the broader B2B live-streaming ecosystem.

Overall, addressing these limitations would further deepen our understanding of how firms leverage live-streaming technologies and organizational capabilities to generate performance and innovation advantages in evolving B2B digital ecosystems. Despite these limitations, this thesis contributes by advancing a comprehensive understanding of how MCNs, as digital intermediaries, strategically align live-streaming strategies with organizational capabilities to achieve superior B2B performance and sustained innovation in complex digital ecosystems.

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Appendix A: Ethical Approval Letter

Ethics Application – Yiming Yang – Approval – 4 May 2023

From: humanethics@massey.ac.nz <humanethics@massey.ac.nz>
Sent: Thursday, 4 May 2023 9:27 am
To: Yiming.Yang.2@uni.massey.ac.nz; Henry Chung <H.Chung@massey.ac.nz>
Cc: Human Ethics <gmhumeth@massey.ac.nz>
Subject: [HE007] - Human Ethics Notification - 4000027474

Kia ora,

Link to the application
HoU Review Group

Ethics Notification Number: 4000027474
Project Title: Digital technology, business capabilities, business performance, and business innovation

Thank you for your notification which you have assessed as low risk.

Your project has been recorded in our database for inclusion in the Annual Report of the Massey University Human Ethics Committee.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University's Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Professor Craig Johnson, Director (Research Ethics),
email humanethics@massey.ac.nz."

Please note that if a sponsoring organization, funding authority or a journal in which you wish to publish require evidence of committee approval (with an approval number), you will have to complete the application form again answering yes to the publication question to provide more information to go before one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

You are reminded that staff researchers and supervisors are fully responsible for ensuring that the information in the low risk notification has met the requirements and guidelines for submission of a low risk notification.

If you wish to print an official copy of this letter:

1. Please login to the RIMS system (https://rme.massey.ac.nz).
2. In the Ethics menu, select Ethics Applications.

3. Using the Advanced option, select Ethics Applications (Area), Application ID (Search On), enter the ethics notification number in the Value area and select Find on the toolbar.
4. With the application the Results Tab, tick the empty box on the far left of the application and select Reports from the toolbar.
5. Select the "Human Ethics - Low Risk Notification Letter" link, this will open the report viewer.
6. Select the application code from the Report Parameters dropdown and submit. You can then select an export option from the top toolbar (Print, Save).

Yours sincerely
Professor Craig Johnson
Chair, Human Ethics Chairs' Committee and
Director (Research Ethics)

Appendix B: Cover Letter

<<Company>>
<<Address>>

Dear <<Title & Name>>,

My name is Yang Yiming, and I am a Ph.D. student from Massey University in New Zealand. I am reaching out to request your participation in a study focused on understanding the technological and business factors contributing to the success of Multi-Channel Networks (MCNs). Despite this being a growing and important industry, this research is the first of its type to be conducted in China. The outcomes of this research will provide constructive guidance for those working in the MCN industry to improve their business operations.

In order to achieve this, I require the participation of leaders in the MCN industry like yourself. I have been following your company's success in the MCN marketplace for a while, and I thought your rapid growth on <<live streaming platform>>meant that you would be an ideal person to help shape this questionnaire before I approach other industry leaders. I would be incredibly grateful if you were able to **complete the enclosed questionnaire**, which will take **20-30 minutes** of your time to complete Part A–C and **10 – 15 minutes** to complete Part D. Your participation will be kept confidential, and you will not be identified in any research that is released. All information you provide will be stored securely on a Massey device and deleted after 10 years.

To ensure the accuracy and relevance of our study, I am also seeking your willingness to participate in **a follow-up 15-minute interview**. Your insights during this interview will help address any concerns or confusion you may have encountered while completing the questionnaire. We are particularly interested in your feedback on the wording, format, and any other aspects of the survey. Your contribution to this follow-up interview is highly valued and will play a crucial role in the overall success and accuracy of our research.

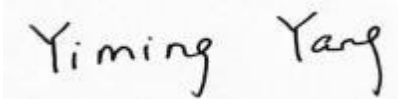
I would appreciate it if you were able to complete the following survey at your earliest convenience. All of the questions in the survey relate to **your firm's current operation in the MCN industry**.

The questionnaire contains two parts, which need to be completed by **two different senior executives** of your firm. The first part is completed by the CEO/ Managing Director, and the second part is completed by the Deputy Managing Director/ Marketing Director/ Chief Financial Officer. Please forward it to someone in authority if you are not in a position to answer the questionnaire.

On completion of this research, I will provide you with a report of the findings, which I hope might be of interest to you in providing you with actionable information about the MCN industry in China.

If you have any questions about this research project, please contact me on [redacted], ph.: [redacted] or WeChat: [redacted]. Thank you very much for your assistance on this research project. I look forward to your valuable input as a senior leader in the MCN industry.

Yours sincerely,



Yang Yiming
Massey University Albany Campus
School of Communication, Journalism and Marketing
Massey University Albany Campus, Private Bag 102 904, North Shore, Auckland 0745

Email: [redacted]

Human Ethics statement:

Any information provided by the respondents will be used strictly for research purposes only. This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research. If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Professor Craig Johnson, Director (Research Ethics), email humanethics@massey.ac.nz or Professor Henry Chung on email h.chung@massey.ac.nz (project supervisor) and myself on email [redacted].

Appendix C: Data collection sources and instruments

Table C1: Information of the data sources

Source/Instrument	Description	Application
State Administration of Radio MCN Research Report (SVA, 2020)	A government report providing insights into MCN industry trends and regulatory developments in China	Widely used in government research, reliable for policy-related data
White Paper on the Development of China's MCN Industry (TOPKLOUT, 2024)	An industry white paper outlining the growth and development of the MCN sector in China	Renowned for providing current and accurate industry insights
China Industry and Commerce Federation and Chinese Enterprise Yellow Pages (He et al., 2022; Chung et al., 2015)	A comprehensive directory of Chinese enterprises, including MCN organizations	Recognized as an authoritative source for business registration and statistics
Backend Database of TikTok (TikTok, 2024)	Accessed database from TikTok to gather MCN-related data	Considered accurate and up-to-date, offering direct access to live streaming platform data
Backend Database of Taobao (Taobao, 2024)	Accessed database from Taobao to gather MCN-related data	
Backend Database of KWAI (TOPKLOUT, 2024)	Accessed database from KWAI to gather MCN-related data	

Note: This table provides a structured and transparent view of the instruments and sources used for data collection, with the sample frame of MCNs engaged in B2B live streaming business, offering detailed descriptions and justifications for reliability and reputation of the data sources in the field.

Source: Authors own work

Table C2: Detailed information on sampled MCNs

MCN name	Industry	MCN role	B2B customers	Customer characteristics	Business focus
MCN A	E-commerce	Content Management, Marketing, Brand Promotion	Retailers, Wholesalers, B2B Resellers	Large retailers, online wholesalers	Product promotion, brand partnerships, bulk sales
MCN B	Fashion & Lifestyle	Content Creation, Brand Engagement	Fashion Retailers, Boutiques	Premium products, exclusive collections	Brand building, influencer collaborations
MCN C	Technology & Electronics	Affiliate Marketing, Content Distribution	B2B Tech Resellers, Distributors	Specialized tech products, consumer electronics	Product launches, sales promotions
MCN D	Education & Training	Digital Content Creation, Customer Acquisition	Educational Institutions, Corporations	Focus on skill development and corporate training	Learning resources, corporate training modules
MCN E	FMCG (Fast-moving consumer goods)	Consumer Product Promotion, Digital Marketing	Supermarkets, Wholesale Distributors	High-turnover, low-margin products	Promotions, seasonal campaigns, brand awareness

Note: This table provides a clearer view of the MCNs' roles in the B2B ecosystem and outlines their business focus in a structured format. It reinforces the B2B focus of the research and emphasizes the B2B target market of MCNs.

Source: Authors own work

Appendix D: Endogeneity testing – Two Stage Least Squared Analysis (2SLS)

Table D1: 2SLS results of strategic performance

Variables	Strategic Performance (1st stage)	Strategic Performance (2nd stage)
Control variables		
Year of MCN experience	0.025	0.047
Industry type	-0.024	-0.010
Current industry size	0.074	0.073
Dynamic industrial context	-0.136 #	-0.137 #
Firm size	0.141 *	0.139 *
Environmental turbulence - Customer preference	-0.041	-0.072
Environmental turbulence - Technology	0.000	-0.014
Environmental turbulence – Competitiveness	-0.083	-0.075
Independent variables		
Exploration learning	0.344 **	0.353 **
Exploitative learning	0.001	-0.017
Relational bonds strategy	0.246 **	0.337 *
Interactions		
Relational bonds strategy × Exploration learning	0.236 *	0.243 *
Relational bonds strategy × Exploitative learning	-0.236 *	-0.237 *

Source: Authors own work

Table D2: 2SLS results of financial performance

Variables	Sales growth (1st stage)	Sales growth (2nd stage)	ROI (1st stage)	ROI (2nd stage)	ROA (1st stage)	ROA (2nd stage)
Control variables						
Year of MCN experience	-0.123	-0.068	0.000	0.040	-0.012	0.062
Industry type	-0.275 **	-0.305 **	0.103	0.147 #	0.092	0.162 #
Current industry size	-0.017	0.027	-0.015	0.098	0.078	0.003
Dynamic industrial context	-0.144 #	-0.183 *	-0.078	-0.058	-0.040	-0.098
Firm size	-0.039	-0.050	0.083 *	0.137 #	0.137 *	0.082
Environmental turbulence - Customer preference	0.049	-0.021	-0.045	-0.185 #	-0.087	-0.051
Environmental turbulence - Technology	-0.110	-0.147 #	0.002	-0.102	-0.052	-0.053
Environmental turbulence – Competitiveness	0.138 #	0.177	-0.089	-0.089	-0.092	-0.079
Independent variables						
Exploration learning	0.206 #	0.248*	-0.029	0.039	0.019	-0.009
Exploitative learning	-0.238 *	-0.274 *	0.186 *	0.035	0.083	0.135
Relational bonds strategy	0.161 *	0.401 *	0.170 *	0.410 *	0.190 *	0.423 *
Interactions						
Relational bonds strategy × Exploration learning	0.247 *	0.282 *	0.297 *	0.398 **	0.387 *	0.318 *
Relational bonds strategy × Exploitative learning	-0.371 **	-0.379 **	-0.287 *	-0.405 **	-0.411 **	-0.276 *

Note: Instrumental variables: industry-specific regulatory changes and government policy changes.

Source: Authors own work

Appendix E: Endogeneity testing – Two Stage Least Squared Analysis (2SLS)

Table E1: 2SLS results of channel performance

Variables	Channel performance -internally oriented (1st stage)	Channel performance -internally oriented (2nd stage)	Channel performance -competitor-centered (1st stage)	Channel performance -competitor-centered (2nd stage)
Control variables				
Year of MCN experience	0.118 #	0.135 #	0.068	0.089
Industry type	-0.107 #	-0.119 #	-0.055	-0.070
Current industry size	-0.150 #	-0.161 *	0.078	0.064
Platform regulatory constraints	0.028	0.032	-0.065	-0.061
Customer preference	0.108	0.094	-0.048	-0.065
Technology breakthroughs	-0.164 *	-0.179 *	-0.172 *	-0.191 *
Cutthroat competition	-0.058	-0.066	0.104	0.094
Firm size	-0.031	-0.039	-0.039	-0.049
Independent variables				
Exploratory learning	-0.019	-0.032	0.153	-0.075
Exploitative learning	-0.029	0.353 **	-0.071 *	0.300 **
Business networking	0.365	-0.015	0.326 **	0.158 *
VMG IT affordance strategy	0.187 **	0.271 **	0.223 **	0.327 **
Interactions				
VMG IT affordance strategy × Exploratory learning	0.218 **	0.198 *	0.207 *	0.182*
VMG IT affordance strategy × Exploitative learning	-0.221 **	-0.222 **	-0.303 **	-0.304 **
VMG IT affordance strategy × Business networking	0.152 *	0.174 *	0.220 **	0.247 **

Table E2: 2SLS results of economic performance

Variables	EP - internally oriented (1st stage)	EP - internally oriented (2nd stage)	EP - competitor -centered (1st stage)	EP - competitor -centered (2nd stage)	Sales growth (1st stage)	Sales growth (2nd stage)	Market share (1st stage)	Market share (2nd stage)
Control variables								
Year of MCN experience	0.135 *	0.139 *	0.183 **	0.204 **	-0.089	-0.079	0.080	0.090
Industry type	-0.111 #	-0.114 #	-0.084	-0.099	0.098 *	0.091	0.158 *	0.151 *
Current industry size	-0.178 *	-0.181 *	-0.031	-0.044	-0.151	-0.157 *	0.036	0.030
Platform regulatory constraints	-0.018	-0.017	0.081	0.085	0.025	0.028	-0.090	-0.088
Customer preference	0.011	0.008	0.026	0.010	0.104	0.096	0.044	0.036
Technology breakthroughs	-0.036	-0.040	0.005	-0.014	-0.050 *	-0.059	-0.075	-0.085
Cutthroat competition	-0.175 *	-0.177 *	-0.267 **	-0.277 **	0.196	0.192 *	-0.162 #	-0.167 #
Firm size	-0.013	-0.015	-0.119 *	0.129 *	-0.108 #	-0.112 #	-0.020	-0.025
Independent variables								
Exploratory learning	-0.005	-0.004	0.014	0.019	0.062	0.064	0.241 **	0.243 **
Exploitative learning	-0.119 #	-0.120 #	-0.090	-0.094	-0.249 **	-0.251 **	-0.303 **	-0.305 **
Business networking	0.466 **	0.463 **	0.392 **	0.377 **	0.016 **	0.009	0.066	0.058
VMG IT affordance strategy	0.215 **	0.237 *	0.195 **	0.296 **	0.380 **	0.427 **	0.248 **	0.297 *
Interactions								
VMG IT affordance strategy × Exploratory learning	0.168 *	0.163 *	0.183 *	0.159 *	0.209 *	0.198 *	0.214 *	0.202 *
VMG IT affordance strategy × Exploitative learning	-0.230 **	-0.230 **	-0.285 *	-0.286 **	-0.399 **	-0.400 **	-0.260 **	-0.261 **
VMG IT affordance strategy × Business networking	0.132 *	0.138 *	0.148 **	0.174 **	0.145 *	0.157 *	0.141 *	0.154 *

Note: # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$

a: Instrumental variable: firm digital maturity (Sun et al., 2025).

b: Firm digital maturity is positively significant with VMG IT affordance strategy but it not significant with channel performance and economic performance.

Appendix F: Regression results of environmental turbulence moderator

To address the necessity of dynamic adaptation and the relevance of dynamic capability theory (DC) in our framework, we incorporated external turbulence as a moderator. External turbulence captures the environmental dynamism that necessitates changes in VMG IT affordances and organizational capabilities. Drawing from established constructs of environmental dynamism (e.g., Schilke, 2014), this variable captures the unpredictability and variability in the business environment that necessitates changes in organizational capabilities, such as IT affordances. The construct was measured using a validated scale ($\alpha = 0.76$, CR = 0.83, AVE = 0.50), where respondents rated their agreement with statements on a seven-point Likert scale (1 = strongly disagree; 7 = strongly agree). Details are shown in Table 3.11.

Table F1: Measurement items of environmental turbulence moderator

Model Constructs	Mean Values	Factor Loading	Cronbach's Alpha	CR	AVE
Environmental Turbulence			0.76	0.83	0.50
The modes of production/service change often and in a major way	5.36	0.849			
The environmental demands on us are constantly changing	5.51	0.883			
Marketing practices in our industry are constantly changing	4.70	0.802			
Environmental changes in our industry are unpredictable	4.88	0.811			
In our environment, new business models evolve frequently	4.81	0.710			

This moderator examines how external turbulence amplifies the necessity for VMG IT affordances to evolve and dynamically adapt in response to volatile conditions. The results, presented in Table 3.10 and Table 3.11, confirm that external turbulence significantly strengthens this relationship, supporting the theoretical foundation of dynamic capability theory (Teece et al., 1997). By incorporating external turbulence as a moderator, our study provides empirical evidence that VMG IT affordances, as dynamic capabilities, are crucial for navigating unpredictable and fast-changing environments. This addition enhances the robustness of our theoretical model and aligns with recent recommendations in the capability theory literature (Forkmann et al., 2018).

Table F2: Regression results of channel performance

	Channel performance – internally oriented scale			Channel performance – competitor-centered scale		
	M1 β	M2 β	M3 β	M1 β	M2 β	M3 β
Control variables						
Year of MCN experience	0.131 #	0.112 #	0.064	0.062	0.070	0.042
Industry type	-0.089	-0.125 #	-0.147 *	-0.028	-0.070	-0.080
Current industry size	-0.031	-0.129	-0.211 **	0.270 **	0.119	0.043
Platform regulatory constraints	0.145 *	0.029	0.067	0.064	-0.077	-0.044
Customer preference	0.148 #	0.129 #	0.089	-0.035	-0.031	-0.064
Technology breakthroughs	-0.110	-0.158 #	-0.202 **	-0.120	-0.164 *	-0.201 **
Cutthroat competition	-0.130	-0.053	-0.047	0.056	0.199	0.110
Firm size	-0.053	-0.031	-0.046	-0.045	-0.037	-0.047
Independent variables						
Exploratory learning		-0.001	-0.049		0.173 *	0.136 #
Exploitative learning		-0.042	0.034		-0.101	-0.041
Business networking		0.378 **	0.371 **		0.332 **	0.322 **
Environmental turbulence		0.031	-0.018		0.093	0.046
VMG IT affordance strategy		0.151 *	0.264 **		0.140 *	0.269 **
Interactions						
VMG IT affordance strategy × Exploratory learning			0.258 **			0.226 **
VMG IT affordance strategy × Exploitative learning			-0.361 **			-0.385 **
VMG IT affordance strategy × Business networking			0.129 *			0.206 **
VMG IT affordance strategy × Environmental turbulence			0.320 **			0.211 **

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

Table F3: Regression results of economic performance (perceptual data)

	Economic performance – internally oriented scale			Economic performance – competitor-centered scale		
	M1 β	M2 β	M3 β	M1 β	M2 β	M3 β
Control variables						
Year of MCN experience	-0.199 **	0.130 *	0.104	-0.199 **	0.172 **	0.130 *
Industry type	-0.054	-0.124 *	-0.129 *	-0.054	-0.09	-0.111 #
Current industry size	0.085	-0.160 *	-0.209 **	0.085	-0.015	-0.079
Platform regulatory constraints	0.205 **	-0.017	0.003	0.205 **	0.087	0.115 #
Customer preference	0.038	0.027	0.005	0.038	0.044	0.020
Technology breakthroughs	0.060	-0.029	-0.051	0.060	0.016	-0.012
Cutthroat competition	-0.354 **	-0.167 *	-0.169 *	-0.354 **	-0.256 **	-0.258 *
Firm size	-0.136 *	-0.013	-0.021	-0.136 *	-0.120 *	-0.013 *
Independent variables						
Exploratory learning		0.010	-0.020		0.029	-0.010
Exploitative learning		-0.130 #	-0.083		-0.095	-0.027
Business networking		0.466 **	0.466 **		0.382 **	0.390 **
Environmental turbulence		-0.008	-0.044		-0.068	-0.115 *
VMG IT affordance strategy		0.173 **	0.254 **		0.146 *	0.256 **
Interactions						
VMG IT affordance strategy × Exploratory learning			0.190 *			0.200 **
VMG IT affordance strategy × Exploitative learning			-0.299 **			-0.393 **
VMG IT affordance strategy × Business networking			0.121 *			0.131 *
VMG IT affordance strategy × Environmental turbulence			0.145 *			0.207 **

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

Table F4: Regression results of economic performance (actual data)

	Economic performance – sales growth			Economic performance – Market share		
	M1 β	M2 β	M3 β	M1 β	M2 β	M3 β
Control variables						
Year of MCN experience	-0.176 **	-0.066	-0.109 #	-0.005	0.067	0.039
Industry type	0.161	0.085	0.080	0.212 **	0.139	0.138 *
Current industry size	-0.143	-0.120	-0.175 *	0.124 #	0.049	0.000
Platform regulatory constraints	0.058	0.020	0.041	-0.002	-0.081	-0.065
Customer preference	0.115	0.109	0.095	0.021	0.066	0.041
Technology breakthroughs	0.030	-0.051	-0.069	-0.016	-0.066	-0.086
Cutthroat competition	0.154 #	0.206 *	0.201 *	-0.219 *	-0.154 #	-0.154 #
Firm size	-0.051	-0.105 #	-0.114 #	0.028	-0.022	-0.029
Independent variables						
Explorative learning		0.088	0.051		0.258 **	0.223 **
Exploitative learning		-0.296 **	-0.227 **		-0.306 **	-0.255 **
Business networking		0.000	0.021		0.061	0.063
Environmental turbulence		0.066	0.015		-0.060	-0.100
VMG IT affordance strategy		0.300 **	0.411 **		0.214 **	0.293 **
Interactions						
VMG IT affordance strategy × Exploratory learning			0.223 **			0.242 **
VMG IT affordance strategy × Exploitative learning			-0.455 **			-0.340 **
VMG IT affordance strategy × Business networking			0.135 *			0.129 *
VMG IT affordance strategy × Environmental turbulence			0.139 *			0.146 *

Notes: All beta values are standardized. # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. All VIF values are less than 4.0.
S = supported; NS = not significant. (N = 229)

Appendix G: Detailed Industry Context and Expanded Role of Multi-Channel Network (MCN) in B2B Live Streaming

China's B2B live streaming market is projected to reach 19,126.9 million yuan by 2024, underscoring the increasing adoption and strategic significance of this digital format (Convertlab, 2020; TOPKLOUT, 2025). The industry structure comprises upstream B2B suppliers (such as brand owners, manufacturers, and factories), midstream MCN organizations, and downstream B2B customers (resellers, wholesalers and retailers) (Liao et al., 2023; Mao et al., 2022).

Upstream B2B principals typically collaborate with professional live streamers or key opinion leaders (KOLs), supported extensively by MCNs. Specifically, MCNs provide comprehensive services that include content production, programming, digital rights management, intellectual property handling, and revenue optimization across various e-commerce and live streaming platforms (Statista, 2023; Mao et al., 2022). By aggregating high-quality resources and expertise, MCNs significantly streamline the efficiency of live streaming operations for B2B principals, eliminating the complexities of managing diverse service providers (Li, 2021; Mao et al., 2022).

Furthermore, during live streaming campaigns, MCNs facilitate direct, interactive communications between upstream suppliers and downstream business customers, thereby enhancing customer engagement and commercial effectiveness (Wang et al., 2022). Through targeted promotional activities and advanced transactional management, MCNs help strengthen relationships between B2B principals and B2B customers, reinforcing the overall ecosystem’s cohesiveness and responsiveness to market dynamics (Chen et al., 2022; Liao et al., 2023).

As MCNs occupy this pivotal role, continuous innovation in their operational capabilities and IT strategies becomes essential for sustaining their competitive advantage and adapting to evolving market demands (Shi et al., 2020; TOPKLOUT, 2025).

Appendix H: Endogeneity testing – Two Stage Least Squared Analysis (2SLS)

Table H1**:** 2SLS results of innovation

Variables	Innovation (1st stage)	Innovation (2nd stage)
Control variables		
Experience in the market	-0.145*	-0.081
Changes in the number of domestic competitors	0.087	0.664**
Number of market segments	0.087	0.394#
MCN's ranking in the industry	0.265**	0.442#
Specialization in some specific industry	-0.064	-0.026
Technical complexity	-0.051	-0.059
Independent variables		
Vigilant market capability	-0.088	-0.071
Adaptive market experimentation capability	-0.247#	-0.333#
Open marketing capability	-0.017	-0.028
TTS IT affordance strategy	0.556**	0.592**
Interactions		
TTS IT affordance strategy × Vigilant market capability	0.200*	0.163*
TTS IT affordance strategy × Adaptive market experimentation capability	0.260*	0.097*
TTS IT affordance strategy × Open marketing capability	0.249*	0.210*

Note: # $p < 0.1$. * $p < 0.05$. ** $p < 0.01$
a: Instrumental variable (IV): regulatory constraints (Cunningham et al., 2019; Xu et al., 2023).
b: The IV, regulatory constraints, is significant with TTS IT affordance strategy but it not significant with innovation.

Appendix I: Supplementary Analyses of TTS IT Affordances Operationalization

Table I1: SEM Results for Triggered Attending Affordance and Innovation

	Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Results
Triggered attending affordance -> Innovation	0.171	0.078	2.194	0.029	Supported
Vigilant market capability x Triggered attending affordance -> Innovation	0.103	0.042	2.449	0.015	Supported
Adaptive market experimentation capability x Triggered attending affordance -> Innovation	0.030	0.014	2.086	0.038	Supported
Open marketing capability x Triggered attending affordance -> Innovation	0.103	0.043	2.426	0.016	Supported

Table I2: SEM Results for Trading Affordance and Innovation

	Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Results
Trading affordance -> Innovation	0.211	0.079	2.669	0.008	Supported
Vigilant market capability x Trading affordance -> Innovation	0.030	0.031	0.942	0.347	Not supported
Adaptive market experimentation capability x Trading affordance -> Innovation	-0.047	0.043	1.089	0.277	Not supported
Open marketing capability x Trading affordance -> Innovation	0.101	0.042	2.420	0.016	Supported

Table I3: SEM Results for Social Connecting Affordance and Innovation

	Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Results
Social connecting affordance -> Innovation	0.235	0.077	3.045	0.003	Supported
Vigilant market capability x Social connecting affordance -> Innovation	0.032	0.016	2.025	0.044	Supported
Adaptive market experimentation capability x Social connecting affordance -> Innovation	0.028	0.015	1.083	0.073	Not supported
Open marketing capability x Social connecting affordance -> Innovation	0.087	0.044	2.006	0.046	Supported