Enterprise Information Systems Capabilities and Data Governance: Comparative Case Study Insights on Innovation and Efficiency Pathways in Manufacturing and Healthcare

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ABSTRACT

This study investigates how enterprise information systems (EIS) capabilities and data governance jointly enable organizations to transform market orientation (MO) into organizational performance (OP). Both manufacturing and healthcare sectors continue to face fragmented data environments, limited interoperability, and governance inconsistencies that weaken the ability of managers to convert market insights into innovation and efficiency outcomes. Moving beyond prior quantitative models, the paper adopts a comparative case study design to capture the socio technical complexity of EIS adoption across manufacturing and healthcare. Six organizations were examined (three manufacturing firms and three healthcare providers). Data were collected through 32 semi structured interviews, supplemented by archival documents and observations. A cross-case analysis was conducted to explore how MO translates into supply chain innovation (SCI) and supply chain efficiency (SCE) through the enabling roles of EIS and governance mechanisms. The analysis reveals that MO does not directly improve OP but operates through distinct pathways. In manufacturing, EIS capabilities enable MO to foster innovation-oriented outcomes, while in healthcare, strong governance frameworks ensure that MO translates into efficiency driven improvements.

Keywords
Enterprise Information Systems; Data Governance; Market Orientation; Supply Chain Innovation; Supply Chain Efficiency; Digital Transformation; Healthcare IT; Manufacturing

Introduction

The digital transformation of supply chains has fundamentally reshaped the role of enterprise information systems (EIS). Once considered back office administrative tools, EIS such as enterprise resource planning (ERP), hospital information systems (HIS), electronic health records (EHR), and IoT-enabled platforms now function as digital infrastructures that integrate data, enable real time decision making, and foster collaboration across increasingly complex organizational networks (Davenport, 1998; Wamba, 2022). These systems underpin Industry 4.0 in manufacturing and healthcare digitization, where competitive advantage increasingly hinges on the ability to leverage digital capabilities effectively.

At the same time, market orientation (MO) remains a foundational strategic concept. Defined as the processes by which firms generate, disseminate, and respond to market intelligence, MO has long been associated with superior innovation, customer satisfaction, and performance outcomes (Kohli & Jaworski, 1990; Narver & Slater, 1990). However, despite decades of research, evidence linking MO to performance remains inconsistent, especially in highly regulated, turbulent, or data intensive industries (Morgan et al., 2009). This inconsistency suggests that MO requires enabling infrastructures both technological and organizational to convert intelligence into meaningful outcomes.

These sector-specific constraints highlight the need to examine how market orientation translates into organizational performance under varying technological and governance conditions (Borazon et al., 2022; Jaworski & Kohli, 2017; Karami et al., 2016). Manufacturing firms struggle with fragmented legacy systems, inconsistent data standards, and interoperability gaps that restrict their ability to convert market intelligence into innovation-oriented actions (Yoon et al., 2016). Healthcare organizations face different but equally critical pressures, including regulatory compliance, patient safety requirements, and siloed clinical data environments that reduce the reliability of system outputs and hinder efficiency improvements (Mishra, 2024).

Recent studies view EIS not as monolithic systems but as bundles of capabilities integration, analytics, automation, and interoperability that enable firms to act upon market insights (Panetto et al., 2016; Weichhart et al., 2016). From a

resource-based view (RBV), these capabilities may qualify as valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney, 1991). Yet their effectiveness depends on organizational readiness based on Technology-Organization-Environment (TOE perspective) and alignment with workflows and social systems (sociotechnical systems theory) (Orlikowski, 1992).

A critical missing piece in this literature is the role of data governance. System outputs are only as valuable as the quality and integrity of the underlying data. Fragmented or inconsistent data can undermine innovation and efficiency even when sophisticated analytics or automation are available (Mohammadi et al., 2016). Conversely, robust governance covering standardization, accuracy, compliance, and stewardship ensures that EIS generate trusted, actionable insights (Tallon, 2013; Weber, 2009). This study therefore positions governance not as a background practice but as a dynamic capability to complement those conditions the effectiveness of digital infrastructures.

Another limitation in prior research is the lack of sector sensitive analysis. Manufacturing and healthcare provide contrasting institutional logics. Manufacturing firms are innovation driven (Anjum et al., 2012), relying on predictive analytics, digital twins, and IoT to achieve differentiation and resilience. Healthcare organizations are efficiency driven, where compliance, patient safety, and interoperability dominate performance outcomes (Gao et al., 2021). Exploring these contrasts can clarify when and where innovation or efficiency pathways dominate.

Research Objectives

This paper addresses three research objectives:

1. To examine how market orientation translates into organizational performance through mediating operational pathways of supply chain innovation and supply chain efficiency
2. To investigate how EIS capabilities and data governance jointly condition these relationships.
3. To identify boundary conditions between innovation driven (manufacturing) and efficiency driven (healthcare) sectors.

Literature Review

Market Orientation and Organizational Performance

Market orientation (MO) refers to the organizational capability to generate, disseminate, and respond to market intelligence (Kohli & Jaworski, 1990; Narver & Slater, 1990). Extensive research links MO with innovation, customer satisfaction, and financial performance (Kirca et al., 2005; Kohli & Jaworski, 1990). However, results remain inconsistent. In highly regulated or resource constrained industries, MO does not always translate into superior performance (Lukas & Ferrell, 2000; Morgan et al., 2009).

In supply chain contexts, MO effects are often realized indirectly, as organizations reconfigure intelligence into operational mechanisms particularly innovation and efficiency. Building on the resource-based view (Barney, 1991) and dynamic capabilities (Teece et al., 1997), this study argues that MO becomes valuable only when transformed into actionable processes.

Proposition 1 (P1): Market orientation contributes to organizational performance indirectly through operational pathways rather than as a direct driver.

Supply Chain Innovation (SCI)

Supply chain innovation (SCI) involves adopting new processes, technologies, and collaborative practices that reconfigure supply chain operations (Fawcett et al., 2011; Sukati et al., 2023). From an RBV perspective, SCI represents a dynamic capability that enables firms to adapt resources to turbulent environments.

In manufacturing, SCI is central for differentiation, product customization, and resilience. Firms increasingly employ IoT, digital twins, and predictive analytics to innovate processes and offerings (Centobelli et al., 2022). SCI thus acts as a bridge between MO and performance outcomes.

Proposition 2 (P2): In manufacturing contexts, market orientation improves organizational performance primarily through supply chain innovation.

Supply Chain Efficiency (SCE)

Supply chain efficiency (SCE) emphasizes resource optimization, cost reduction, and compliance with quality standards (Villena et al., 2009). Efficiency is particularly critical in healthcare, where regulatory compliance, patient safety, and data interoperability dominate performance outcomes (Teng et al., 2024).

Market oriented organizations in healthcare may align their operations with institutional demands, but efficiency outcomes depend on visibility and integration across processes. Thus, SCE serves as the key operational mechanism in this sector.

Proposition 3 (P3): In healthcare contexts, market orientation improves organizational performance primarily through supply chain efficiency.

Enterprise Information Systems (EIS) Capabilities

EIS are not merely transactional systems but bundles of capabilities integration, analytics, automation, and interoperability that enable firms to convert intelligence into innovation and efficiency outcomes (Anaya et al., 2015; Turetken et al., 2019).

From the resource-based view, these capabilities are valuable and rare resources. From the TOE framework, their adoption depends on organizational readiness and environmental conditions. From sociotechnical systems theory, their value depends on alignment with user practices and workflows (Orlikowski, 1992).

Proposition 4 (P4): Enterprise information systems capabilities enable the transformation of market orientation into innovation and efficiency outcomes, but their effectiveness depends on organizational and sectoral context.

Data Governance as a Dynamic Complement

While EIS capabilities form the technical foundation, their value depends on the quality of the underlying data. Poorly governed data fragmented, inconsistent, or non-compliant can neutralize system benefits. Robust governance ensures data quality, accuracy, and compliance, allowing EIS to produce actionable insights (Gregory, 2011).

This study positions data governance as a dynamic complement to EIS. In healthcare, governance is tightly linked to compliance regimes. In manufacturing, governance supports integration and innovation across global supply chains.

Proposition 5 (P5): Data governance strengthens the effectiveness of EIS capabilities, ensuring that system outputs contribute to reliable innovation and efficiency outcomes.

Recent Studies on EIS, Data Governance, and Market Orientation

Recent literature has increasingly underscored the interdependence between enterprise information systems (EIS) capabilities, data governance structures, and strategic orientations such as market orientation (MO) (Ahmadimousaabad et al., 2013; Brunner et al., 2024; Ghasemi et al., 2016; Karami, 2025). Studies emphasize that innovative outcomes from EIS rely on well-integrated and interoperable system architectures, as insufficient data standardization and fragmented information flows often constrain the value organizations can derive from digital technologies (Wamba, 2022).

Research on supply chain innovation similarly found that digital tools and big data applications generate meaningful benefits only when supported by structured processes and reliable information governance (Karami et al., 2014; Yoon et al., 2016). In healthcare contexts, weak data governance has been shown to undermine the effectiveness of EHR and HIS platforms, reducing trust in system outputs and limiting efficiency gains (Abourokbah et al., 2023).

These studies collectively point to persistent gaps including misalignment between technological capabilities and organizational processes, variability in governance maturity, and sector-specific institutional constraints that motivate the need for a comparative investigation of how EIS and governance condition the MO–performance relationship.

Sectoral Boundary Conditions

Institutional logics differ significantly between sectors. Manufacturing operates in dynamic markets, relying on innovation driven strategies. Healthcare operates in regulated environments, where efficiency, compliance, and patient safety dominate (Liu et al., 2012). By comparing both sectors, this study highlights industry specific pathways in digital transformation.

Proposition 6 (P6): Innovation pathways dominate in manufacturing, whereas efficiency pathways dominate in healthcare.

Contributions

This study contributes to enterprise information systems and digital transformation literature in three important ways:

- Theoretical Integration: The study integrates resource-based view (RBV), dynamic capabilities, technology–organization–environment (TOE), and sociotechnical systems perspectives to explain how enterprise information systems capabilities and data governance jointly influence the translation of market orientation into organizational outcomes.
- Mechanism Clarification: The study clarifies the operational mechanisms through which market orientation contributes to organizational performance, showing that innovation and efficiency serve as distinct sector-dependent pathways.
- Sectoral Insights: The comparative analysis reveals important sectoral differences, demonstrating that innovation-oriented pathways dominate in manufacturing, whereas efficiency-oriented pathways dominate in healthcare, highlighting the contextual nature of digital transformation outcomes.

The remainder of the paper is structured as follows. Section 2 reviews the literature on MO, EIS, and data governance, and develops theoretical propositions. Section 3 outlines the case study methodology. Section 4 presents findings across the six cases, with tables and figures illustrating thematic patterns and sectoral contrasts. Section 5 discusses theoretical and managerial implications, while Section 6 concludes with future research directions.

Conceptual Framework

Drawing these insights together, the conceptual framework (see Figure 1) positions MO as an antecedent that influences OP indirectly, mediated by SCI and SCE. EIS capabilities enable these pathways, while data governance conditions their effectiveness. Sectoral context determines which pathway dominates.

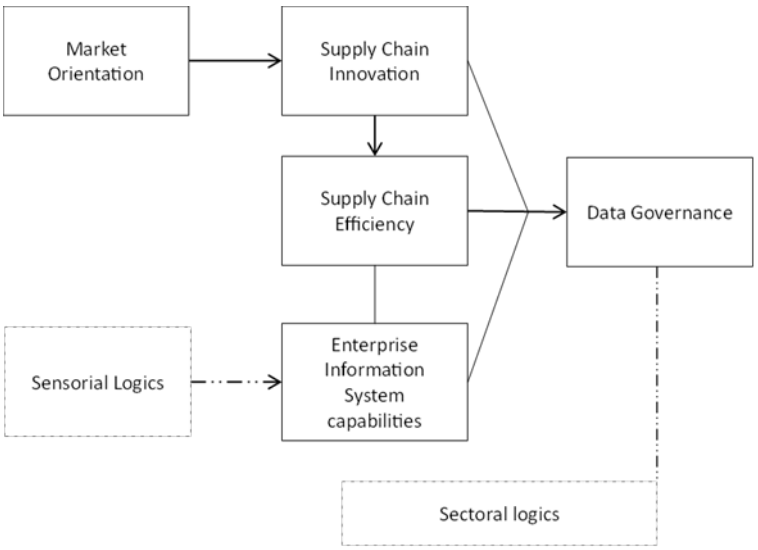

Figure 1. Conceptual Framework (Case Based)

Legend:
• Solid arrows = theoretically supported directional relationships
• Dotted arrows = exploratory or context-dependent relationships
• Bidirectional arrows = reciprocal influence between constructs
• "Sectoral Logics" = sector-specific institutional logics shaping how organizations interpret and act upon system-generated and market signals.

OP is intentionally omitted from Figure 1 because this framework focuses on pathway mechanisms (SCI/SCE) prior to performance outcomes. OP is fully represented in Figure 2.

Methods

Research Design

This study employs a comparative multiple case study design to investigate how Enterprise Information Systems (EIS) capabilities and data governance condition the relationship between market orientation (MO), supply chain innovation (SCI), supply chain efficiency (SCE), and organizational performance (OP). The case study approach is suitable for exploring complex socio technical phenomena where the boundaries between technology, governance, and performance outcomes are blurred (Eisenhardt, 1989; Yin et al., 2018).

By examining six organizations across manufacturing and healthcare, the study highlights sectoral boundary conditions innovation driven versus efficiency driven logics while ensuring analytical generalization beyond single cases. The use of replication logic strengthens internal validity, as each case either confirms or challenges emerging propositions. While the findings are not statistically generalizable, the study aims for analytical generalization by linking observed patterns to established theory across contrasting sectoral contexts.

Prior research examining enterprise information systems (EIS) and performance relationships has predominantly relied on large-scale quantitative survey designs, which assume stable constructs and linear causal relationships. However, such approaches often oversimplify the socio-technical realities of digital transformation, including governance maturity, data fragmentation, system interoperability, and institutional constraints.

To address these limitations, this study adopts a comparative multiple case study design, which is well suited for exploring how and why market orientation is transformed into innovation or efficiency outcomes under different sectoral conditions. Case-based methods enable process-level analysis and contextual sensitivity that cannot be adequately captured through variance-based models (Eisenhardt & Graebner, 2007).

Case Selection

Cases were selected using a theoretical sampling strategy aimed at maximizing sectoral contrast and governance maturity variation (Eisenhardt & Graebner, 2007). The sample included:

- Three manufacturing firms that have adopted ERP, IoT, and analytics systems to drive innovation.
- Three healthcare organizations (hospitals and clinical networks) that rely on HIS/EHR platforms for efficiency, compliance, and patient safety.

Selection criteria:

1. Active use of enterprise information systems (ERP, HIS, EHR, IoT, or analytics platforms).
2. Documented governance structures or policies in place.
3. Willingness to provide access to managers and archival data.

The resulting cases offer variance in size, system maturity, and governance sophistication, strengthening comparative insights. Sampling followed a purposive theoretical strategy designed to maximize sectoral contrast and variation in enterprise information system maturity and governance practices. The six cases were selected because they represented different organizational contexts while sharing common characteristics, including active use of enterprise information systems and established governance mechanisms. This approach enabled theoretical replication by examining whether similar patterns emerged across cases and whether sector-specific differences influenced the observed relationships. Interview data reached thematic saturation after approximately 28 interviews, with the remaining interviews used to confirm emerging themes and support triangulation across data sources.

Table 1 Case Profiles

Case	*Sector*	*Type*	*Size*	*EIS Adopted*	*Data Governance Maturity*	*Key Respondents*
M1	Manufacturing	Heavy Equipment / Industrial Machinery	Large	ERP + IoT	High	CIO, Supply Chain Director
M2	Manufacturing	Consumer Goods / Component Manufacturing	Medium	ERP	Moderate	IT Manager, Plant Operations
M3	Manufacturing	Electronics / Advanced Manufacturing	Large	ERP + Advanced Analytics	Low	SCM Head, Innovation Manager
H1	Healthcare	General Hospital	Large Hospital	EHR + HIS	High	CIO, Medical Director
H2	Healthcare	Outpatient Clinic	Medium Clinic	HIS	Moderate	IT Director, Clinical Ops Lead
H3	Healthcare	Healthcare Network / Multi-Facility System	Large Network	EHR + AI Decision Tools	Low	IT Manager, Governance Officer

Data governance maturity was assessed based on documented policies, standardization practices, data quality procedures, and compliance mechanisms.

Data Collection

Data were collected between January and April 2025 from three complementary sources to ensure triangulation (Jick, 1979):

1. Semi structured interviews – 32 interviews (average 60 minutes) with IT managers, supply chain executives, clinicians, and directors. Interview protocols focused on:
    - How MO is embedded in decision making.
    - How EIS capabilities (integration, analytics, automation, interoperability) support innovation and efficiency.
    - How governance frameworks influence EIS effectiveness.
2. Archival documents – organizational reports, system manuals, governance policies, and industry regulations.
3. Observations – site visits in four cases (two manufacturing, two healthcare) provided insights into workflow practices and system use.

All interviews were transcribed, coded, and members checked with participants to enhance validity.

Table 2 Mapping of Interview Questions to Framework Constructs Interview Question Focus

Interview Questions	*Related Construct*	*Purpose*
How does your organization gather and respond to market intelligence?	Market Orientation (MO)	Examine sensing, dissemination, and response behaviors.
How do EIS support operational or strategic decision-making?	EIS Capabilities	Identify integration, analytics, automation, interoperability roles.
What innovation initiatives emerged from system use?	Supply Chain Innovation (SCI)	Explore innovation-related pathways (manufacturing).
How have systems improved efficiency or compliance?	Supply Chain Efficiency (SCE)	Explore efficiency-oriented pathways (healthcare).
How is data quality monitored and governed?	Data Governance	Assess governance maturity.
How does sector context influence system use?	Sectoral Logics	Understand institutional constraints.

Data Analysis

Data analysis followed a three stage coding approach (Strauss & Corbin, 1998):

1. Open coding – identification of first order categories (e.g., "EIS integration," "compliance enforcement," "innovation culture").
2. Axial coding – clustering categories into higher order themes (e.g., "EIS as innovation enabler" vs. "EIS as compliance tool").
3. Cross case analysis – systematic comparison across manufacturing and healthcare, identifying convergent and divergent patterns.

NVivo software was used to support coding and thematic mapping. Findings were validated through triangulation of data sources and participant feedback.

To ensure analytic rigor, Appendix A presents representative coded excerpts from interviews, a summary of theme frequencies across cases, and a mapping of axial themes to the six theoretical propositions. Data governance is not modelled as a statistical moderator in this study. Instead, governance is conceptualized as an enabling and conditioning mechanism that shapes the reliability, trustworthiness, and effectiveness of enterprise information system outputs.

Governance influences whether EIS capabilities successfully translate market intelligence into innovation or efficiency outcomes but does not function as a moderating or control variable in a formal analytical sense. No control or moderating variables were explicitly incorporated into the analytical framework, as the study focuses on identifying mediating pathways through qualitative pattern matching rather than hypothesis testing.

Ensuring Rigor

To enhance methodological rigor:

- Construct validity – achieved through data triangulation (interviews, archives, observations).
- Internal validity – ensured by pattern matching with theoretical propositions (Yin, 2018).
- External validity – achieved through analytical generalization across six cases.
- Reliability – maintained using a case study protocol and coding manual.

Ethical Considerations

This study adhered to established ethical principles for qualitative research involving human participants. Informed consent was obtained from all participants prior to data collection, and participation was entirely voluntary. Respondents were informed of the study's purpose and their right to withdraw at any stage without consequence. To protect confidentiality and privacy, all interview data were anonymized, and organizational as well as individual identifiers were removed from transcripts and research records. Data were securely stored and used solely for academic research purposes.

Results

The results are presented in three stages: (1) within case insights from the six organizations, (2) cross case thematic patterns highlighting commonalities and divergences, and (3) sectoral contrasts between manufacturing and healthcare. Together, these findings illustrate how EIS capabilities and data governance condition the translation of MO into innovation and efficiency outcomes.

Within Case Insights

Manufacturing Cases (M1–M3):

- M1 (Large Manufacturer): With high governance maturity, ERP and IoT systems enabled real time supplier integration. Managers emphasized how predictive analytics turned market signals into innovative projects. Governance frameworks ensure data standardization, preventing costly delays.
- M2 (Medium Manufacturer): ERP was used primarily for process standardization. Innovation outcomes emerged only when middle managers creatively repurposed system reports. Governance was moderate, leaving some data silos unresolved.
- M3 (Large Manufacturer with Analytics): Advanced analytics were deployed, but weak governance undermined innovation value. Managers reported "data distrust" due to inconsistent reporting practices, limiting innovation benefits despite technical capability.

Healthcare Cases (H1–H3):

- H1 (Large Hospital): Strong governance policies ensured compliance and patient safety. EHR and HIS systems were fully interoperable, leading to significant efficiency gains in clinical workflows. Innovation outcomes were minimal, but efficiency improvements were pronounced.
- H2 (Medium Clinic): Moderate governance maturity allowed HIS to streamline processes but left gaps in interoperability. Efficiency gains were evident in billing and scheduling, but data quality issues limited scalability.
- H3 (Large Healthcare Network): Adoption of AI based decision support tools was undermined by weak governance. Clinicians distrusted system outputs, leading to resistance. Efficiency remained the dominant logic, but governance failures blocked full system potential.

Cross Case Thematic Patterns

Four recurring themes emerged across cases:

Table 3 Thematic Patterns of EIS Capabilities and Governance

Theme	*Manufacturing Evidence*	*Healthcare Evidence*
Integration	ERP–supplier and IoT connectivity facilitated product innovation.	EHR interoperability improved patient record access and compliance.
Analytics	Predictive demand forecasting enabled innovation in manufacturing.	Analytics are primarily used for compliance monitoring and efficiency tracking.
Governance	Weak governance reduced trust in analytics (M3).	Strong governance enhanced compliance, efficiency, and system reliability (H1).
System Role	EIS is positioned as innovation enablers.	EIS positioned as compliance and efficiency tools.

Cross Case Comparison: Pathways

The comparative analysis highlights how MO translates into performance differently by sector.

Table 4 Cross Case Comparison: Innovation vs. Efficiency Pathways

Dimension	*Manufacturing*	*Healthcare*
MO → Innovation	Strong (M1, M2, M3)	Weak (H1, H2, H3)
MO → Efficiency	Moderate (M2, M3)	Strong (H1, H2, H3)
Role of EIS	Catalyst for product/process innovation.	Driver of compliance, patient safety, and efficiency.
Role of Governance	Secondary but supportive.	Primary, determining trust and compliance.

Sectoral Contrasts

By comparing the two sectors, distinct boundary conditions emerge:

Table 5 Cross Case Comparison: Innovation vs. Efficiency Pathways

Pathway	*Stronger in Manufacturing*	*Stronger in Healthcare*
MO → SCI	✓	
SCI → OP	✓	
MO → SCE		✓
SCE → OP		✓

These findings confirm that innovation pathways dominate in manufacturing, while efficient pathways dominate in healthcare.

Cross Case Comparative Model

To integrate findings, a comparative model was developed (see Figure 2).

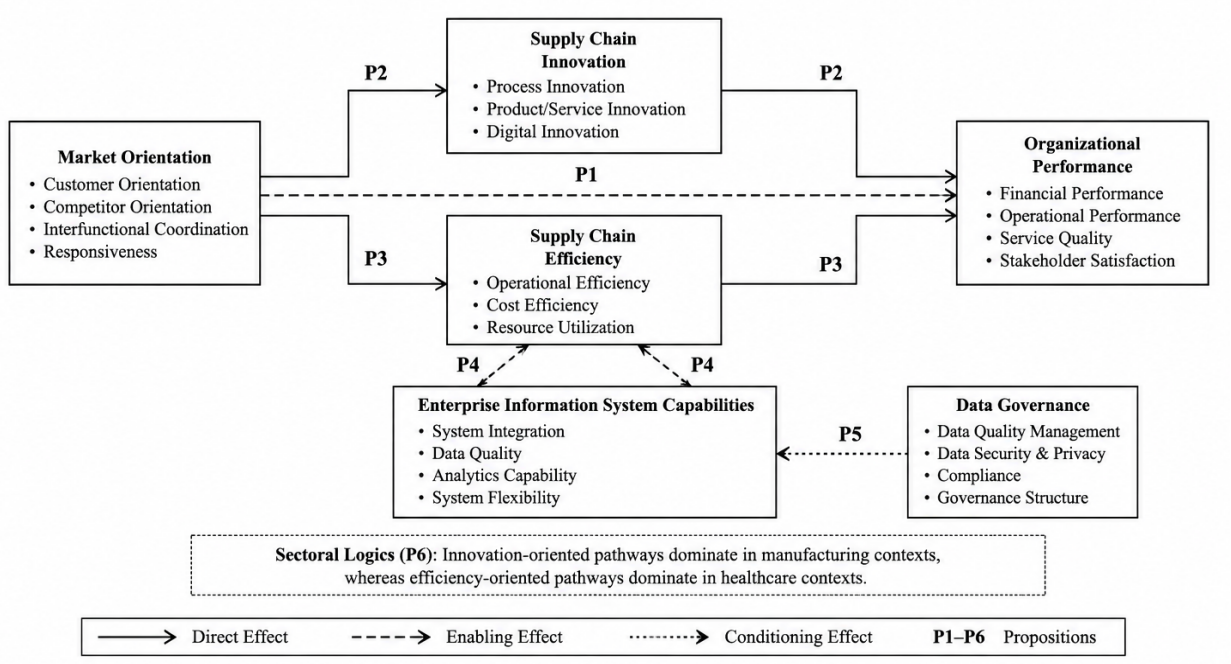

Figure 2. Cross Case Comparative Model (Manufacturing vs. Healthcare)

The case evidence supports all six propositions:

- **P1:** MO influences OP indirectly through operational pathways.
- **P2:** Innovation mediates MO–OP relationships in manufacturing.
- **P3:** Efficiency mediates MO–OP relationships in healthcare.
- **P4:** EIS capabilities enable but do not guarantee outcomes.
- **P5:** Data governance conditions the effectiveness of EIS capabilities.
- **P6:** Sectoral logics determine whether innovation or efficiency dominates.

Across cases, EIS capabilities consistently acted as enablers by providing the integration, analytics, and automation necessary to operationalize market intelligence. In contrast, data governance functioned as a conditioning mechanism that influenced whether system outputs were trusted, accurate, and compliant. Strong governance strengthened the effectiveness of EIS capabilities, whereas weak governance reduced the reliability and value of system-generated insights. Strong governance amplified the impact of EIS capabilities, while weak governance diminished or negated their value. This distinction explains why organizations with similar systems experienced different outcomes.

Discussions

Theoretical Implications

This study advances understanding of how enterprise information systems (EIS) capabilities and data governance jointly shape the translation of market orientation (MO) into organizational performance (OP). Building on prior and well-established studies, existing research has emphasized the direct relationship between market orientation and organizational performance (Borazon et al., 2022; Wang & Zhang, 2025; Xing et al., 2023). However, the case evidence here confirms that MO's influence is indirect, realized only through operational pathways of supply chain innovation (SCI) and supply chain efficiency (SCE).

From the resource-based view (RBV), the findings suggest that MO and EIS capabilities together constitute valuable but incomplete resources; they become strategically significant only when deployed through dynamic processes of innovation and efficiency (Barney, 1991; Teece et al., 1997). The mediating roles of SCI and SCE highlight the dynamic capabilities (DC) perspective, which argues that firms must continuously reconfigure and redeploy resources to sustain performance advantages.

The results also extend the technology–organization–environment (TOE) framework, showing that adoption of EIS is not sufficient; system effectiveness depends on organizational readiness and sectoral context (Maroufkhani et al., 2020; Oliveira & Martins, 2011). This study further contributes to sociotechnical systems theory by demonstrating how governance mechanisms serve as a "social layer" that conditions the effectiveness of digital infrastructures (Orlikowski, 1992). Without governance, even sophisticated systems may fail to generate trust and value. Together, these findings conceptualize EIS not as direct performance drivers, but as contingent enablers that require alignment with governance and context (Wamba, 2022).

Contributions to EIS Literature

This research contributes to the EIS literature in three keyways:

1. Clarifying operational pathways: Unlike prior models that positioned MO as a direct antecedent to performance, this study empirically demonstrates that MO improves OP only indirectly through SCI and SCE. This nuanced perspective strengthens strategic orientation research in EIS contexts.
2. Integrating governance into EIS theory: By embedding data governance as a conditioning mechanism, the study advances scholarship that increasingly views governance not as administrative compliance but as a dynamic capability that enables trustworthy digital transformation (Tallon, 2013; Weber, 2009).
3. Highlighting sectoral boundary conditions: The cross-case comparison demonstrates that manufacturing firms rely on innovation driven pathways, while healthcare organizations depend on efficiency driven pathways. These findings align with institutional theory, which argues that industry specific norms and regulations shape how digital infrastructures translate into outcomes (Gao et al., 2021).

Managerial Implications

For practitioners, the findings provide actionable guidance:

- For executives: Strategic orientations such as MO must be operationalized through EIS-enabled processes. Investment in systems should be tied to clear pathways (innovation in manufacturing, efficiency in healthcare).
- For IT managers: Technical investments in integration, analytics, and automation will not deliver performance unless they are supported by strong governance frameworks. IT leaders should embed governance policies into system deployment strategies.
- For healthcare organizations: Prioritize governance to ensure compliance and efficiency. EIS should be designed to minimize errors, improve interoperability, and enhance patient safety rather than chasing innovation as the primary outcome.
- For manufacturing firms: Leverage EIS to drive innovation through predictive analytics, digital twins, and collaborative platforms. Governance still matters, but the primary logic is innovation driven product and process improvement.

- For policymakers: Sector specific digital transformation policies can accelerate outcomes. For example, healthcare regulators should continue to mandate interoperability and data quality standards, while manufacturing policy may focus on incentivizing innovation and Industry 4.0 adoption.

Sectoral Insights

The comparative analysis underscores that "one size fits all" approaches to EIS adoption are ineffective. Manufacturing and healthcare follow distinct performance logics shaped by their institutional environments.

- In manufacturing, competitive markets reward differentiation and resilience, making innovation the dominant pathway. Weak governance can be tolerated temporarily, but over time it erodes system trust.
- In healthcare, compliance and safety considerations mean that governance is indispensable. Efficiency gains, not innovation, represent the most valued performance outcomes.

These insights caution against universal claims in the EIS literature and instead call for sector-sensitive theorizing and practice.

Conclusion and Implications

This study examined how market orientation (MO) translates into organizational performance (OP) across manufacturing and healthcare contexts. The findings suggest that MO creates value primarily through operational pathways of supply chain innovation (SCI) and supply chain efficiency (SCE), rather than through direct effects on performance. Comparative case evidence indicates that innovation-oriented pathways are more prominent in manufacturing organizations, whereas efficiency-oriented pathways dominate in healthcare settings, reflecting distinct sectoral logics and institutional requirements (Barney, 1991; Teece et al., 1997). Enterprise information systems (EIS) capabilities serve as important enablers of these pathways, while data governance conditions their effectiveness by influencing data quality, compliance, and trust in system outputs (Maroufkhani et al., 2020). Overall, the findings highlight that digital transformation is a socio-technical process requiring alignment among strategic orientation, system capabilities, governance mechanisms, and organizational context (Orlikowski, 1992; Weber, 2009). By clarifying these sector-specific pathways, the study contributes to both theory and practice while providing a foundation for future longitudinal and cross-industry research.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Appendix A. Representative Coded Excerpts and Proposition Mapping

Theme	**Representative Evidence**	**Related Proposition**
Market Orientation	Respondents emphasized the importance of continuously monitoring customer and stakeholder requirements and incorporating feedback into operational decisions.	P1
EIS Integration	Managers highlighted that ERP, EHR, and analytics platforms improved information visibility and coordination across functions.	P4
Supply Chain Innovation	Manufacturing respondents reported that digital technologies supported process improvements, predictive planning, and innovation initiatives.	P2
Supply Chain Efficiency	Healthcare respondents emphasized workflow standardization, compliance, and resource optimization enabled by digital systems.	P3
Data Governance	Participants indicated that data quality, standardization, and governance practices influenced trust in system outputs.	P5
Sectoral Logics	Manufacturing organizations prioritized innovation outcomes, whereas healthcare organizations focused on efficiency and compliance objectives.	P6

Source: Authors' own analysis.