Blockchain Adoption and Business Model Innovation:

A Research Framework

Abstract

As businesses seek to innovate to sustain competitive advantages, blockchain technology is increasingly viewed and embraced as a transformative force in various contexts. Several research studies and review articles have focused on the significant advantages of blockchain technology in shaping business success, including decentralization, improved security, and operational efficiencies. This study expands and contributes to this extant literature by conducting a systematic literature review (SLR) of research articles to examine blockchain adoption drivers, barriers, decision-making processes, and outcomes, and builds and validates an Antecedent-Decision-Outcome framework.

The systematic literature review of blockchain studies yielded 107 academic research articles analyzed using MAXQDA software to determine significant themes and build the ADO framework. We then validated the ADO framework through qualitative interviews at two startup companies and a survey of 24 organizations adopting blockchain technology. Findings reveal that transparency, security, and efficiency are the primary factors for organizations to adopt blockchain technology. However, regulatory uncertainty, scalability challenges, and organizational resistance can inhibit adoption. Therefore, adopting blockchain technology strengthens current business approaches while creating opportunities for new businesses built around blockchain technology.

This study bridges academic theory with empirical validation to advance understanding of blockchain adoption through a complete framework that benefits academic research and

industry practice. Practitioner implications include actionable guidance for organizations implementing blockchain systems while highlighting potential advantages and obstacles.
Keywords: Blockchain, systematic literature review (SLR), ADO framework, technology adoption, PRISMA, regulatory challenges, digital transformation.

1. Introduction

Blockchain technology has the potential to transform and revolutionize business operations while improving security and transparency across numerous industries. Blockchain technology originated as a solution for cryptocurrency purposes but now finds application across multiple industries, such as finance, supply chain, and government operations (Nakamoto, 2008). Blockchain is essential in digital transformation, providing tamper-proof records and automated transactions through smart contracts while operating in a decentralized framework (Iansiti & Lakhani, 2017).

However, blockchain's advantages have not resulted in universal adoption across industries because of persistent and significant implementation challenges (Lacity, 2018). Some organizations adopt blockchain to boost their data security and operational efficiency while gaining stakeholder trust. Other organizations have stayed cautious because of regulatory uncertainties and the expensive technical challenges of merging blockchain with their current IT systems. These barriers demonstrate a critical need for organizations to utilize a systematic framework that illustrates the decisions about blockchain adoption and its related factors (Lacity, 2018; Fridgen et al., 2018).

In the domains of information systems (IS) and business strategy, blockchain serves an essential function because choices regarding adoption rely on technological feasibility and strategic business objectives (Xu et al., 2023). Extant research studies on blockchain adoption

have been conducted through technical analysis and industry-specific examinations, but they lack a comprehensive cross-industry evaluation of blockchain adoption factors and decision-making processes (Queiroz et al., 2020). This study fills the research gap by building and validating the Antecedents-Decisions-Outcomes (ADO) framework to evaluate blockchain adoption while providing theoretical knowledge and actionable insights for businesses, policymakers, and information systems experts. Through a systematic literature review (SLR), this research provides a structured analysis of blockchain adoption that integrates empirical evidence from case studies and survey results to enhance its findings.

The rapid evolution of blockchain technology and its widespread implementation in different sectors require a research strategy that combines diverse methodologies. Through systematic literature review, case studies, and empirical survey validation, this study provides both structured analysis and a deep understanding of blockchain adoption factors. The SLR pinpoints central themes and theoretical gaps in extant literature, while case studies present practical insights into business models powered by blockchain technology. The survey builds upon qualitative interview results by applying empirical validation techniques through open-ended questions to collect widespread adoption experiences from different industries (Kitchenham et al., 2009).

Studying blockchain adoption benefits from an SLR approach because research exists in scattered forms throughout various academic disciplines and industry sectors (Treiblmaier, 2019; Wamba & Queiroz, 2022). Research shows that some studies explore technical challenges like security and scalability, while others investigate business applications within the healthcare and supply chain management sectors. A structured SLR provides transparent results that can be replicated by systematically analyzing peer-reviewed research to identify core drivers, obstacles,

and decision-making aspects of blockchain adoption. Therefore, this study conducts an SLR to combine findings from 107 academic research articles to build an Antecedent-Decision-Outcome (ADO) framework.

Further, while prior case studies have explored blockchain technology's business implementation, few have examined the decision-making processes that lead to blockchain adoption. Therefore, besides the SLR, this research study fills this gap by examining two startup case interviews investigating new business models focused on blockchain technology. The case studies showcase real-world blockchain innovation while analyzing the strategic and operational elements that drive adoption decisions. Further, this study empirically validates and expands its findings from case interviews by surveying 24 established organizations implementing blockchain technology. The research study supplements its case interviews with a quantitative survey that uses open-ended responses to confirm principal adoption themes and discover larger industry patterns. The research questions that guide this study are:

1. *What antecedent factors affect an organization's decision to adopt and implement blockchain technology?*
2. *What decision-making processes help organizations determine their adoption of blockchain technology?*
3. *What outcomes do organizations anticipate and achieve through blockchain technology adoption?*

This study significantly contributes to academic research and industry practice through its structured and theory-based analysis of blockchain adoption using the Antecedents-Decisions-Outcomes (ADO) framework. The study departs from previous research by providing a cross-industry view that combines a systematic literature review (SLR), case study research, and

empirical survey validation. This research studies blockchain adoption systematically by exploring drivers, barriers, catalysts, decision-making processes, and post-adoption outcomes while maintaining theoretical rigor and practical relevance. The study delivers practical, actionable insights for business executives, policymakers, and information systems professionals who evaluate blockchain adoption.

The rest of the paper is structured as follows. The next section details the methodology of the SLR process, the Antecedents-Decisions-Outcomes (ADO) framework, the case interviews, and the survey. Next, in the results section, we present the findings on the ADO framework and integrate insights from case interviews and the survey. Next, we discuss the theoretical and practical implications and highlight the study's strengths and limitations. Finally, we conclude by summarizing the key findings and suggesting directions for future research.

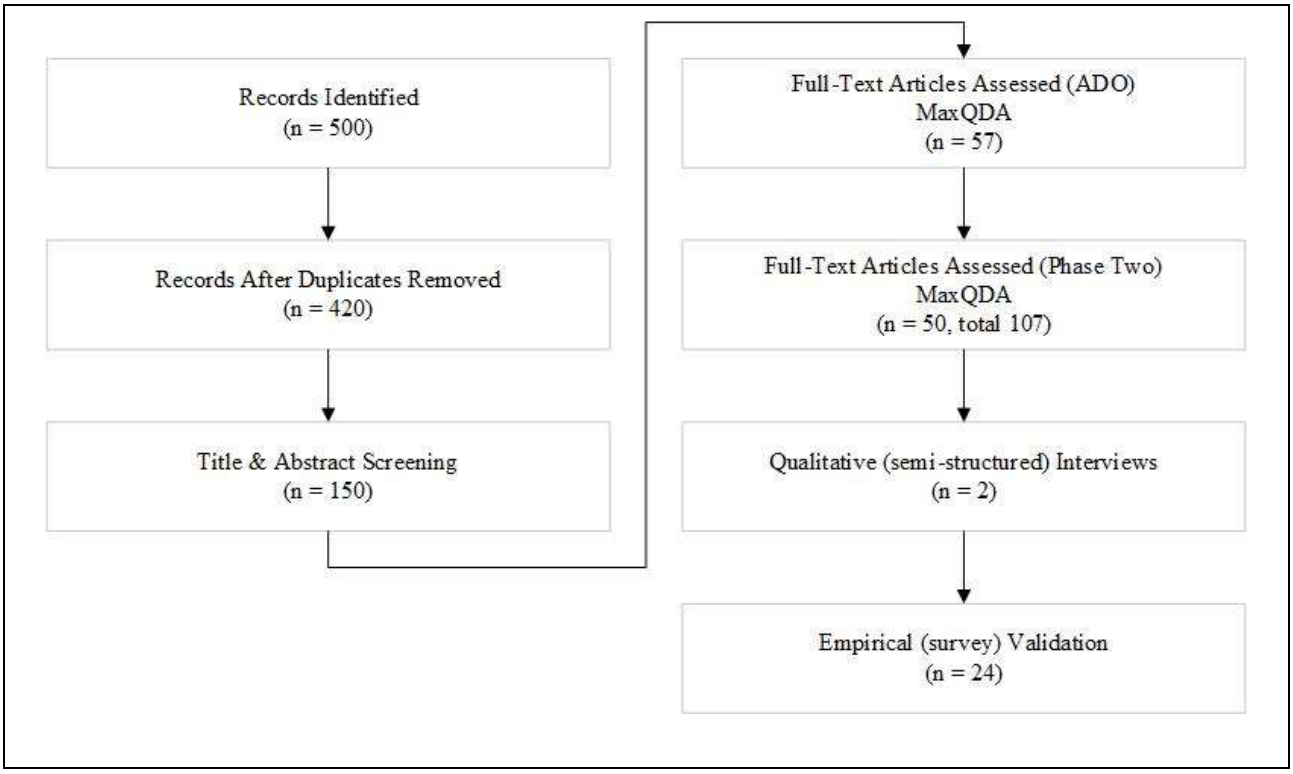
2. Methodology

This study investigates blockchain adoption factors by performing a systematic literature review combined with case studies and empirical survey validation. For the Structured Literature Review (SLR), we used the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure methodological rigor throughout the systematic identification, screening, and analysis of relevant literature (Moher et al., 2009). Figure 1 illustrates the PRISMA Flow Diagram, which demonstrates the sequential steps taken to refine and obtain the final research dataset through a structured and transparent research process.

This study uses the Antecedents-Decisions-Outcomes (ADO) framework to systematically organize findings and analyze blockchain adoption. This framework divides adoption factors into three categories: drivers, barriers, and catalysts that affect managerial adoption intent, along with outcomes that include post-adoption benefits and challenges. The

ADO framework is particularly suited for organizing blockchain adoption, since it can help categorize external influences and internal organizational decision-making processes to determine adoption strategies (Queiroz et al., 2020).

Figure 1 - Study Selection Process



Real-world insights into blockchain adoption challenges and business model changes came from two case studies with blockchain startups, which connected academic theories to business applications. The research team surveyed 24 organizations utilizing blockchain technology to verify the study's findings empirically. The survey extends the case studies using open-ended responses to confirm essential adoption themes and expand the industry viewpoint. This research employs a multi-method approach to blockchain adoption understanding through a combination of theoretical literature analysis with empirical qualitative interview findings and survey validation. The next section describes the systematic literature review method, which

covers the search strategy, inclusion and exclusion criteria, screening process, and data analysis methodology.

Systematic Literature Review Process

We applied the systematic literature review (SLR) methodology to analyze blockchain implementation in organizations. We followed PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure the reliability and validity of our process. We conducted the SLR in two phases. In phase 1 of the SLR, we focused on the senior-scholar basket of journals to search for articles on blockchain. We started with the senior-scholar basket of journals, since this list of journals is considered the top-tier journals in Information Systems. The search keywords we used were "blockchain adoption," "decision-making," "business model innovation," "drivers of blockchain implementation," and "barriers to blockchain technology." We used Boolean operators (AND, OR, NOT) to filter results and enhance result precision. As shown in Figure 1, the initial search resulted in a large set of articles, including articles focusing on the technical and organizational aspects of blockchain. Since this SLR focuses only on the organizational aspects of blockchain adoption, these studies were excluded from the list of articles. This phase resulted in 57 research articles and provided insights into factors affecting blockchain adoption from top-tier journals.

In phase 2 of the SLR, we expanded the search beyond the senior-scholar basket of journals. For comprehensive literature coverage, we used multiple academic databases, including Scopus, Web of Science, IEEE Xplore, and Google Scholar. We followed the same approach of excluding technically focused articles, but included articles that focused on the organizational aspects of blockchain. This phase resulted in an additional 50 research articles. We combined the research articles we obtained from phases 1 and 2, making 107 articles. The final set includes a

comprehensive list of articles, encompassing foundational research studies and recent developments on blockchain adoption.

Inclusion and Exclusion Criteria

A set of predetermined inclusion and exclusion rules helped refine the dataset. Each research article was examined to determine if it studied aspects of blockchain implementation in business settings while exploring factors such as drivers, barriers, and decision-making elements through empirical research or systematic reviews across multiple industries. We included only English-language publications from established academic sources. Research articles that only examined blockchain technical elements, like cryptographic algorithms or consensus mechanisms, did not qualify for inclusion, along with literature that mentioned blockchain without exploring adoption or decision-making aspects. To ensure methodological rigor, the research excluded non-peer-reviewed articles, opinion pieces, and editorials.

Screening and Selection Process

The study selection process was initiated by retrieving relevant studies from chosen databases according to PRISMA guidelines. The research team removed duplicate entries before screening titles and abstracts to identify relevant studies. Articles that matched the study's focus underwent full-text review to establish their suitability. The final dataset for thematic analysis contained studies that specifically examined the driving forces behind blockchain adoption, its barriers, and decision-making factors.

Data Extraction and Analysis

The data from the chosen studies underwent extraction and coding through MAXQDA qualitative analysis software for systematic analysis. The Antecedents-Decisions-Outcomes

(ADO) framework guided the classification of study articles into adoption-related drivers, barriers, catalysts, decision-making influences, and outcomes. The research team performed a thematic analysis to detect common patterns in blockchain adoption while comparing industry trends and verifying results across multiple studies. The adopted method produced data that matched theoretical technology adoption models regarding consistency. Integrating systematic literature review techniques with qualitative coding and thematic analysis enables this study to offer a structured framework validated to understand blockchain adoption (Webster & Watson, 2002).

Quality Assessment and Reliability

This study established a systematic quality assessment process to maintain rigor and reliability during the systematic literature review (SLR) and case studies to ensure validity. The research followed standardized appraisal frameworks to select high-quality literature review sources and cross-validate case studies, which helped boost credibility. This section defines the quality assessment standards for article selection and explains how triangulation improved study reliability.

The credibility of studies chosen for inclusion determines the SLR's reliability. The study used Critical Appraisal Skills Programme (CASP) guidelines to evaluate qualitative studies and the Assessing the Methodological Quality of Systematic Reviews (AMSTAR) checklist for systematic reviews to assess the selected articles' methodological quality. The assessment frameworks evaluate research design, data collection techniques, transparency, and reproducibility standards. The final dataset contained studies that underwent evaluation using specific assessment criteria.

- Relevance to blockchain adoption: The research focuses on blockchain implementation within business and organizational environments.
- Methodological rigor: Research with thorough research design structures, empirical support, or systematic methodologies received priority selection.
- Peer-review status: The selection process included only papers that underwent peer review and those conference papers that had a significant impact.
- Data credibility: Research providing clear sources, replicable methods, and empirical evidence received preference over studies based on conceptual ideas or personal viewpoints.

We applied strict quality assessment standards, which allowed only dependable research to influence the development of the ADO framework.

Validation Part 1: Qualitative Interviews

To validate the ADO framework, executives from blockchain-driven businesses participated in qualitative interviews that supplemented systematic literature review findings while validating identified adoption factors. These executives created businesses with new organizational models based on blockchain technology. These qualitative interviews provided valuable perspectives on blockchain adoption challenges, decision-making processes, and business model transformations, connecting academic theory to practical implementation.

Selection Process

The study identified two companies operating in different industries and geographical contexts: Youni (North America) and CodeAura (Mauritius). Youni develops blockchain solutions focused on educational credential verification, while CodeAura specializes in software development and enterprise blockchain solutions with digital governance expertise. These executives had at least

three years of experience guiding blockchain adoption, participated in both planning and executing blockchain initiatives, and achieved successful blockchain business model integration.

Interview Process

The qualitative interview sessions were conducted using a semi-structured approach, facilitating guided and adaptable discussions. The interviews focused on the following themes derived from SLR:

- Drivers of blockchain adoption: What was the primary driver behind the company's decision to implement blockchain technology?
- Barriers to adoption: Which major obstacles emerged throughout the implementation process?
- Decision-making factors: What organizational processes determined blockchain adoption decisions?
- Business model transformation: What alterations have blockchain technology brought to your organization's growth or revenue generation?
- Scalability and regulatory concerns: Which external elements and limitations hinder additional adoption?

The interviews lasted 45 to 60 minutes and took place through videoconferencing. We ensured ethical standards were followed during the interviews by obtaining informed consent from all participants beforehand. We protected confidentiality and allowed participants to conceal sensitive business information as needed.

Data Analysis

Thematic analysis of the interview data matched responses to categories established by the ADO framework. The MAXQDA software enabled researchers to analyze interview transcripts and extract repeated themes concerning blockchain adoption motivations, challenges, and decision-based processes. We matched qualitative interview findings with SLR results to determine consistency and uncover fresh viewpoints absent from previous studies. When interview responses did not match academic studies, further investigation was conducted to identify if the divergence was caused by particular industry factors, regulatory conditions, or changing adoption patterns.

Triangulation and Cross-validation

The study improved the reliability of its findings by using triangulation to verify SLR insights with qualitative interview data. Research credibility improves through triangulation because it confirms findings using multiple methods and data sources (Denzin, 1978). The research utilized methodological triangulation to compare findings from two separate sources—the SLR and qualitative interviews—to uncover areas of agreement and divergence along with new themes.

The triangulation process followed these steps. The study extracted and categorized blockchain adoption drivers, barriers, catalysts, and decision-making factors together with outcomes through the ADO framework. Next, thematic analysis was used to code interview transcripts, which matched the themes found during the literature review. The adoption factors in the SLR and interviews were validated as robust elements. We analyzed differing insights to help identify industry-specific, technological, or regulatory influences on adoption that academic research had overlooked. The ADO framework underwent expansion and refinement through

qualitative interview insights to match theoretical perspectives with blockchain adoption challenges in real-world contexts.

Integrating systematic quality assessment and triangulation methods delivers methodologically rigorous and reliable findings relevant to academic research and industry practice. The following section shows the findings from systematic literature reviews and qualitative interviews organized according to the ADO framework to offer a comprehensive perspective on blockchain adoption factors.

Validation Part 2: Survey

The study's empirical foundation was reinforced beyond the original two case interviews with practical insights on blockchain adoption through a survey. The survey collected direct insights from companies utilizing blockchain technology and acts as a complementary component to the systematic literature review and qualitative case interviews. Key insights gathered through the case interviews prompted the development of targeted survey questions to investigate blockchain adoption motivations, challenges, and outcomes. The survey used selection-based questions as well as open-ended questions to capture subjective opinions of respondents.

The survey participants were recruited from CloudResearch, which operates a specialist platform for professional respondent pools. The study's participant selection mandated that all respondents work as professionals within organizations based in the United States who had adopted blockchain technology. The survey reached out to 25 selected organizations to ensure industry representation, from finance to technology and healthcare to supply chain sectors.

We removed one response due to inadequate detail, producing 24 detailed and high-quality responses. A summary of the survey can be found in Table 1. We consolidated the survey

responses and analyzed them for emerging themes related to a) Business drivers for blockchain adoption, b) challenges faced during implementation, c) types of blockchain solutions utilized, d) operational improvements observed and e) lessons learned from adoption experiences.

Table 1 – Quantitative Survey

Survey Question	Question Type	Objective
What is your role in the organization?	Select (single)	Identify the respondent's role in understanding perspectives on blockchain adoption.
Which industry does your organization operate in?	Select (single)	Categorize responses by industry to analyze sector-specific trends.
How many employees does your company have?	Select (single)	Assess organization size to determine blockchain adoption trends across different company scales.
What was the primary reason your organization considered adopting blockchain? (Select up to two)	Select (Checkbox)	Identify key motivations for blockchain adoption, such as transparency, cost reduction, or security.
What type of blockchain solution has your organization implemented?	Select (multiple)	Determine whether private, public, or consortium blockchains are preferred in different industries.
What business functions have improved due to blockchain adoption?	Select (multiple)	Understand operational areas where blockchain has created measurable benefits.
What challenges did your organization face before implementing blockchain?	Open-Ended	Capture qualitative insights on pre-adoption issues and pain points.
What were the biggest barriers to successful blockchain implementation?	Select (multiple)	Identify obstacles such as cost, regulatory issues, or resistance to change.
What lessons did your organization learn from implementing blockchain?	Open-Ended	Gather insights on best practices and recommendations for future adopters.

Demographics

A total of 24 organizations that have deployed or tested blockchain-based solutions provided complete responses to the survey. The survey response pool comprised of multiple industry sectors, with representation from healthcare, supply chain and logistics, finance and banking, and technology and software (see Figure 2). The survey included organizations ranging from startups with 1-50 employees and small-to-medium enterprises with 51-500 employees to large corporations employing over 500 people (see Figure 3).

The study included participants who served as CEOs/Founders, Blockchain Developers/IT Managers, and Researchers/Academics to maintain a balance between strategic

decision-makers and technical experts (see Figure 4). The varied sample offers a complete view of blockchain usage by identifying implementation challenges, industry-specific applications, and quantifiable benefits. The empirical validation of this study benefits from the inclusion of multiple industries, different company sizes, and professional positions.

Figure 2 - Survey Respondents by Industry

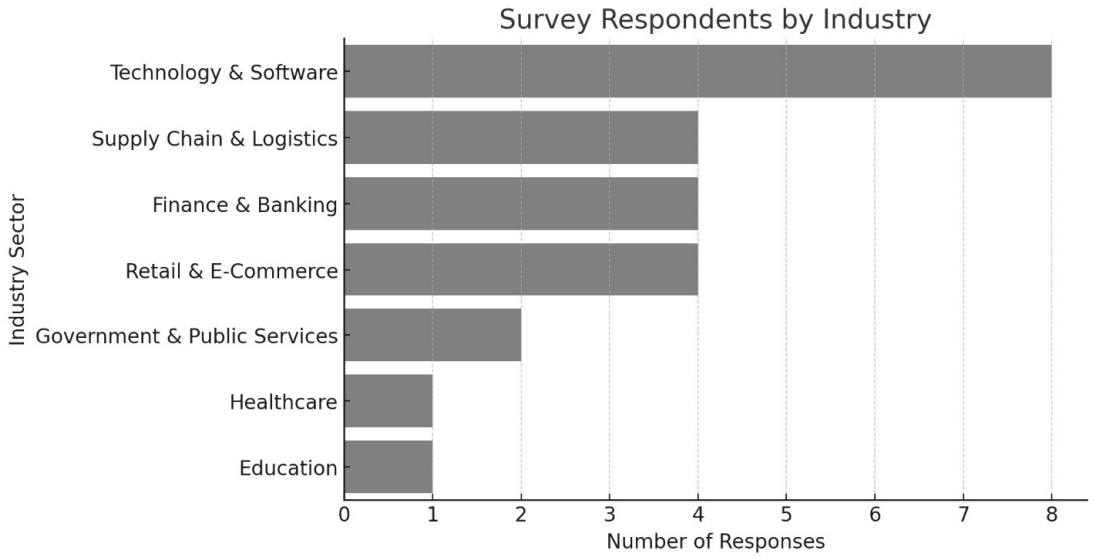


Figure 3 - Survey Respondents by Company Size

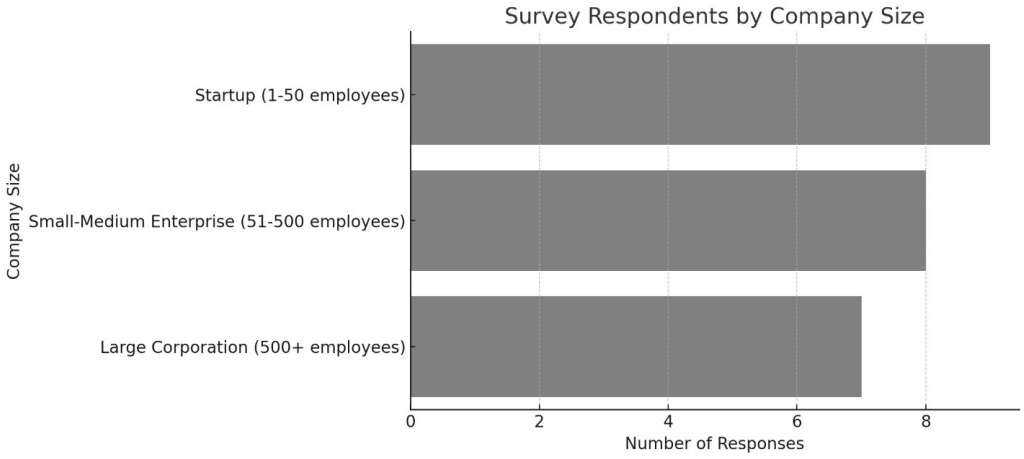
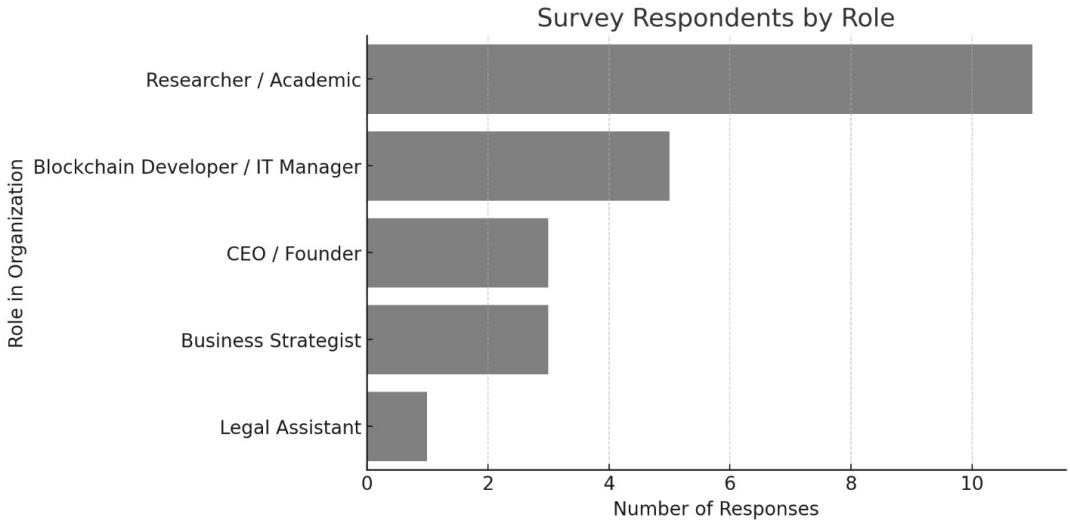


Figure 4 - Survey Respondents by Role



3. Results

Through analysis of 107 peer-reviewed articles on blockchain adoption, this systematic literature review (SLR) establishes an Antecedent-Decision-Outcome (ADO) framework. A thorough two-phase process determined study selection to achieve complete coverage and maintain validity and current relevance. The initial phase of the study found 57 seminal or influential articles that explored foundational blockchain adoption concepts, focusing on antecedents and decision-making factors. In the second phase, we integrated 50 current studies into the dataset, which authenticated the framework and included updated trends and advancements in blockchain research.

The selected studies include research from multiple fields, such as information systems, supply chain management, finance, healthcare, and digital business models. We utilized multiple research approaches to achieve comprehensive blockchain adoption research, including systematic reviews and empirical studies, case studies, and conceptual frameworks. MAXQDA

was used for systematic qualitative coding and thematic analysis to identify essential constructs that drive and hinder blockchain adoption alongside its accelerators. The literature assessment examined decision-making elements, including managerial intent and strategic fit, while evaluating business model innovation outcomes and industry consequences. Appendix A provides a detailed overview of the included studies, categorizing them according to citation details, methodology, and thematic focus while highlighting theoretical contributions and key findings.

ADO Framework Findings

A systematic review of 107 peer-reviewed studies uncovered significant factors influencing blockchain adoption. We used MAXQDA enabled systematic classification and analysis through qualitative coding and thematic analysis to extract rigorous findings from various research methods such as empirical studies, case studies, conceptual models, and systematic reviews. Findings reveal that organizations adopt blockchain technology due to its decentralized nature which enhances transparency, security, and trust. Major barriers to blockchain adoption include scalability issues, high costs, and regulatory uncertainties. Open-source development, cloud computing, and financial crises act as external catalysts driving blockchain adoption in specific industries. We illustrate the factors driving blockchain adoption (Table 2), challenges (Table 3), catalysts (Table 4) and decision-making processes (Table 5) in the following section.

Table 2 - Antecedents (Drivers)

Theme	Driver	**Context**
Distributed	Transparency	All transactions are visible to all participants within the network (Chong et al., 2019a).
	Decentralization	The records are stored on multiple nodes instead of one central node (Andersen & Bogusz, 2019b).
	Auditability	Transactions are cross-validated and contain a complete history that can be reviewed (Chanson et al., 2019b).
Cryptography	Security	Secure in terms of integrity, non-repudiation, availability, and confidentiality (Helm, 2021b).

	Anonymity	The identity of those performing the transactions is unknown (Yin et al., 2019).
	Encryption	Use a public and private key to authenticate the participants (Du et al., 2019).
Consensus	Trust	The consensus mechanism provides confidence that the transactions are accurate (Rossi et al., 2019).
	Traceability	The transaction and all subsequent movements are recorded and can be reviewed later (Rossi et al., 2019b).
	Data Integrity	The data is verified, accurate, and consistent across nodes (Drummer & Neumann, 2020b).
Immutability	Immutability	Changing the records is difficult or impossible (Iansiti & Lakhani, 2017).

Table 3 - Antecedents (Barriers)

Theme	Barrier	**Context**
Technical	Speed	Transactions are slow compared to centralized processing (Morkunas et al., 2019).
	Scalability	The ability to handle increasing workloads and data storage requirements (Chanson et al., 2019b; Morkunas et al., 2019).
	Cost	Blockchain technology is more costly than traditional centralized transaction processing (Morkunas et al., 2019).
	Technical Skills	The organization's employees have the technical skills to build and maintain the technology (Morkunas et al., 2019).
Behavioral	Standards	Consistent protocols across blockchain forks (Drummer & Neumann, 2020b).
	Interoperability	The ability of different blockchain protocols to integrate (Drummer & Neumann, 2020b).
	Future Regulation, Policies & Laws	Fears of future regulation (Chanson et al., 2019b; Morkunas et al., 2019).

Table 4 - Antecedents (Catalysts)

Theme	Catalyst	**Context**
Technical	Internet	Global computer networks are based on standard communication protocols (Chanson et al., 2019b).
	Cloud	Using remote hardware for computing (Chanson et al., 2019b).
Behavioral	Open-Source Software	Open-source software where the underlying code is freely available and can be changed (Ziolkowski et al., 2020b).
	Financial Crises	The global financial crisis of 2008 led to a distrust of banks and governments among some people (Baldwin, 2018; Earle, 2009; Hearit, 2018; Scalera & Dixon, 2016).

Table 5 - Decisions

Theme	Decision	**Context**
Intent	Managerial Intent	The intent of managers to adopt blockchain technology

Organizations view blockchain adoption as a strategic decision prompted by technological, regulatory, and managerial influences. Blockchain adoption emerges mainly from its potential to improve transparency, security, auditability, and data integrity. Trust-building mechanisms inherent in blockchain's decentralized structure enable users to minimize intermediary dependence while ensuring precise transaction validation. Despite its benefits, multiple obstacles prevent blockchain technology from achieving broader adoption (Morkunas et al., 2019; Chanson et al., 2019). Scalability and transaction cost challenges persist alongside regulatory uncertainties and interoperability restrictions between various blockchain systems. Organizations hesitate to integrate blockchain due to challenges that would otherwise not hinder their adoption decisions.

Simultaneously, external factors function as catalysts that speed up the adoption process. Blockchain technology has become more accessible and adaptable due to open-source collaboration and cloud computing, while financial crises and economic instability have increased interest in decentralized financial systems. Such factors establish environments that allow blockchain to serve as practical solutions for industries that require alternatives to conventional centralized operational methods. Analyzing drivers and barriers alongside catalysts yields a systematic approach to evaluate blockchain adoption, revealing the strategic reasons for its uptake and the essential requirements for successful implementation.

Case Interviews and Findings

We validated the ADO framework using two interviews with executives from companies using blockchain technology in education and software development. The executives shared their experiences regarding blockchain adoption decisions, implementation factors, and scalability challenges in changing business contexts. Their insights validated crucial literature themes while

revealing gaps between academic research and industry conditions and introduced new adoption factors that existing studies have not fully examined. They also provided essential context for understanding blockchain adoption through the lens of practical information systems management and business decision-making processes.

Antecedents: Drivers and Barriers

The case interviews show that transparency, security, and trust are the foremost drivers of blockchain adoption, which becomes especially important for sectors that demand high data integrity and accountability. One executive pointed out the advantage of blockchain's decentralized, immutable ledger, a secure solution for applications that need tamper-proof documentation, such as academic credentials and software licenses. One executive explained that blockchain's security benefits come with speed disadvantages that hinder real-time processing capabilities in specific applications. Both executives pointed out numerous obstacles that create difficulties in blockchain adoption. Regulatory uncertainty is a major concern among stakeholders because government policies regarding blockchain transactions remain under development. Smaller organizations face significant barriers due to the high implementation costs and advanced technical skills required. They identified the rising acceptance of decentralized applications (DApps), open-source blockchain initiatives, and cloud computing advancements as key factors that simplify blockchain adoption (Chen et al., 2021) . Established tech firms are forming partnerships with blockchain providers, which helps organizations merge blockchain technology with their existing IT systems and diminishes barriers to adoption.

Decision-Making Factors in Blockchain Adoption

Both executives claimed that managerial intent and strategic business alignment are key drivers in blockchain adoption decisions. One executive explained that their company adopted

blockchain as a "risk-calculated investment," proceeding only after a feasibility analysis verified blockchain's enduring value. It was also mentioned that leadership support is essential for blockchain projects because top executives must provide a clear vision to move past the proof-of-concept stages. Further, they opined that industry-specific needs can also shape blockchain adoption decisions. Blockchain adoption in education centers around secure credential verification and decentralized learning records, while software development protects intellectual property and enables secure transactions between distributed teams. Blockchain technology is not a universal solution for all situations because its implementation requires alignment with an organization's current workflows and strategic objectives.

Outcomes: Expected and Realized Benefits

Both executives confirmed that blockchain adoption remains in its early development stage, yet they identified multiple real-world advantages that have already surfaced. Blockchain-based systems provide enhanced security and audit capabilities, which lower the chances of fraud and data manipulation, especially in situations that demand substantial verification and trust. Blockchain technology has allowed organizations to create innovative business models like tokenized incentive systems and decentralized marketplaces, which traditional IT systems have struggled to support.

Further, they emphasized that the complete utilization of blockchain technology depends on sustained financial support and iterative changes. According to one executive, many organizations overlook the operational challenges of decentralization, which include governance, platform interoperability issues, and maintenance expenses. Blockchain adoption brings evident benefits but requires meticulous planning, ongoing dedication, and constant technology upgrades for success. In summary, the qualitative interviews offered important information about

blockchain adoption decisions in practice, confirming research from systematic literature reviews and exposing new challenges and strategic issues that existing research had not widely covered.

Survey Findings

While the case studies focused on how blockchain technologies are utilized for business model innovation, empirical validation was conducted on established organizations adopting blockchain technology. This section provides an in-depth summary of survey findings illustrating the decisions and outcomes of blockchain technology adoption.

The qualitative interview findings deliver concrete data about blockchain use in different industries, supporting the main themes from the systematic literature review and professional interviews. Tables summarizing essential survey findings are included in this section to demonstrate the significance of the data provided to help visualize trends. The findings from the survey are organized into five main categories, including motivations for adoption and implementation challenges, along with types of blockchain solutions that are used, business functions improved, and lessons learned.

Table 6 - Motivations for Blockchain Adoption

Motivation	Survey Findings	Example Quotes from Respondents
Transparency & Trust	79% of respondents cited blockchain's ability to improve stakeholder record-keeping and trust.	"Blockchain has helped us create an immutable ledger, eliminating disputes in our supply chain."
Security & Fraud Prevention	67% highlighted data security and fraud reduction as primary adoption drivers.	"We needed a system resistant to cyberattacks. Blockchain gave us that security layer."
Operational Efficiency & Cost Reduction	54% adopted blockchain to automate processes and reduce transaction costs.	"It cut our processing time in half and removed costly third-party intermediaries."
Regulatory Compliance	Only 21% saw compliance as a primary driver.	"We implemented blockchain for compliance, but regulations remain unclear."

The survey participants pointed out multiple primary motivations for adopting blockchain technology (Table 7). The most common reasons for adopting blockchain technology are

transparency and trust (79%), which surpass security and fraud prevention (67%). Organizations prioritized cost reduction and operational efficiency (54%) as major adoption factors, and yet rarely mentioned regulatory compliance (21%).

Table 7 - Challenges Faced During Implementation

Challenge	Survey Findings	Example Quotes from Respondents
Lack of Skilled Personnel	71% struggled to find blockchain experts.	"Finding developers who understand blockchain was one of our biggest hurdles."
Regulatory & Legal Uncertainty	58% cited unclear or conflicting regulations.	"Every region has different rules, making implementation frustrating."
High Initial Costs	50% reported expensive setup and integration costs.	"The upfront cost was significant, especially for infrastructure upgrades."
Resistance to Change	42% faced internal pushback from employees or executives.	"People were initially skeptical, but after training, they saw the benefits."

Respondents acknowledged blockchain advantages but encountered multiple implementation challenges. Table 8 distinguishes the most serious barriers to blockchain implementation, which include insufficient skilled personnel (71%) and regulatory uncertainty (58%) as the top obstacles.

Table 8 - Types of Blockchain Solutions

Blockchain Type	Survey Findings	Industry Preference
Private Blockchain	50% of companies preferred private networks for security and control.	Most common in **finance, healthcare, and enterprise solutions**.
Consortium Blockchain	33% used consortium models for shared governance.	Frequently used in **logistics and supply chain**.
Public Blockchain	17% experimented with Ethereum and Bitcoin networks.	Limited adoption due to **scalability and regulatory concerns**.

The businesses surveyed adopted various blockchain models based on their unique operational requirements. Table 9 lists the main blockchain solutions companies use and shows that private blockchains (50%) represent the most common choice.

Table 9 - Business Functions Improved by Blockchain

Business Function	Survey Findings	Example Quotes from Respondents
Payments & Transactions	71% reported faster and more secure financial transactions.	"Blockchain-enabled real-time cross-border payments with lower fees."

Supply Chain & Logistics	63% saw improvements in product tracking and inventory management.	"We can now verify product authenticity at every stage."
Identity & Security Management	50% used blockchain for fraud prevention and identity verification.	"No more data breaches – blockchain secured our user authentication."
Smart Contracts & Automation	46% automated agreements and reduced paperwork.	"Legal contracts are executed automatically, reducing delays."

Survey respondents noted enhancements in various business operations after implementing blockchain technology. Table 10 demonstrates which operational domains blockchain technology influences with payments and transactions (71%) being the top-choice, followed by supply chain and logistics (63%)

Table 10 - Lessons Learned & Recommendation

Lesson Learned	Survey Findings	Example Quotes from Respondents
Train Employees Early	67% emphasized the need for education and onboarding.	"People feared blockchain at first, but training changed everything."
Start with a Pilot Program	54% recommended testing before full-scale deployment.	"Running a small pilot helped us refine our implementation strategy."
Clearly Define Business Goals	50% stressed the importance of aligning blockchain with company objectives.	"Adopting blockchain just because it is trendy is a mistake."

The survey participants shared their knowledge of best practices for blockchain adoption success. Table 11 summarizes essential learning points by underscoring the crucial role of training employees and implementing pilot programs.

In summary, the survey results confirm essential findings from the systematic literature review and qualitative interviews and deliver novel viewpoints about practical implementation obstacles. Key takeaways include a) Transparency, security, and efficiency remain the biggest adoption drivers, b) Talent shortages and unclear regulations continue to be major hurdles, c) Private and consortium blockchains dominate enterprise use cases and d) Companies that trained employees early and piloted blockchain saw the highest success rates.

Comparative Analysis

Analyzing survey data and qualitative interviews alongside literature offers multiple practical lessons for businesses intending to adopt blockchain. Businesses must place blockchain at the top of their priorities as it delivers superior transparency and security while boosting operational efficiency. Multiple data sources verify that blockchain stands out regarding trust building, fraud prevention capabilities, and cost savings. Organizations can maximize blockchain benefits through practical implementation in payment systems, supply chain management, and identity management processes.

Success in blockchain adoption depends heavily on effective training and change management strategies. According to survey respondents, employee resistance emerged as the most significant obstacle to adoption. Organizations must start training teams early, correct misunderstandings, and provide practical training to ensure effective implementation. Private and consortium blockchains represent the most suitable choice for enterprise blockchain applications. The literature, case studies, and survey results indicate that public blockchains face significant enterprise usage difficulties because of scalability limitations and regulatory restrictions. Enterprises should assess private and consortium blockchain models to achieve enhanced control and security while ensuring scalability.

Regulatory challenges may be industry specific. Although the case interviews and literature reviews identify compliance as a major issue, survey answers showed that it was not considered a crucial factor for blockchain adoption. Regulatory environments vary across industries, with finance and healthcare sectors facing more stringent legal requirements than supply chain and logistics businesses. Successful blockchain deployment depends on organizations understanding compliance requirements in their specific industries.

The survey findings confirm established blockchain adoption trends from qualitative interviews and literature but also reveal distinct viewpoints regarding workforce challenges and regulatory uncertainty in practical settings. In this study, findings from various sources consistently demonstrate that blockchain technology improves security, trustworthiness, and operational efficiency throughout its adoption process. Employee resistance and training gaps stand out in survey responses as primary issues that previous research has not extensively addressed. Regulatory challenges demonstrate industry-specific variations, implying compliance hurdles exist based on contextual factors instead of being universally applicable. These insights build a richer understanding of business model innovation through blockchain technology and can potentially shape the discussion on adoption strategies.

4. Discussion and Implications

This study makes several important contributions to extant literature. First, systematic literature reviews about blockchain adoption have mainly concentrated on technological progressions together with industry-based applications and theoretical frameworks (Treiblmaier, 2019; Wamba & Queiroz, 2022). These studies provide important information about blockchain capabilities but do not sufficiently examine the decision-making processes behind adoption. As a result, prior works have highlighted blockchain advantages and obstacles but lack substantial empirical support for understanding adoption choices in various organizational settings (Queiroz et al., 2020). This study fills both these existing research gaps by synthesizing the extant literature, building an ADO framework and validating it with qualitative interviews and empirical survey, to gain a comprehensive understanding of blockchain adoption (Table 12).

Table 11 - Comparison of This Study with Prior Blockchain SLRs

Study	Scope	Methodology	Key Findings	Unique Contribution of This Study
Treiblmaier (2019)	Supply chain management	Thematic review	Blockchain improves transparency and traceability	Expands beyond supply chain to cross-industry analysis
Queiroz et al. (2020)	Blockchain in logistics	Systematic review	Adoption barriers include regulation and scalability	Incorporates managerial decision-making factors
Wamba & Queiroz (2022)	Blockchain in operations	Bibliometric review	Identifies key blockchain adoption research trends	Validates literature findings through expert interviews
This Study	Cross-industry adoption	Systematic review + Case studies + Survey validation	Identifies drivers, barriers, and catalysts using the ADO framework	Validates findings with survey data and provides a cross-industry empirical perspective on adoption decisions

Second, combining two case interviews from blockchain-native startups with a survey of 24 organizations implementing blockchain technology, this study makes a novel contribution to extant literature, and diverges from prior reviews which have focused on theoretical frameworks or industry case studies (Table 12). This study also builds upon prior research by examining managerial decision-making processes and post-adoption results through a more detailed lens. In contrast, previous studies focused mainly on blockchain's technical and strategic feasibility (Iansiti & Lakhani, 2017). Prior systematic literature reviews identified adoption drivers and barriers but lacked empirical validation of these elements across multiple industry sectors. Through survey-based validation, this research confirms and enhances key themes discovered via case studies and academic literature, thereby improving the dependability of blockchain adoption research.

Third, this study developed and validated the ADO framework on blockchain adoption. Prior research shows that blockchain technology can improve transparency, security, and efficiency, yet there is limited examination of these benefits regarding real-world implementation decisions in various organizational contexts (Xu et al., 2023). Through incorporating qualitative

survey responses, this research delivers an enhanced understanding of business considerations during blockchain adoption, which confirms the qualitative interview results and builds on previous SLR theoretical foundations. The Antecedents-Decisions-Outcomes (ADO) framework sets this study apart because it arranges blockchain adoption factors into a systematic model that examines pre-adoption conditions while tracking decision-making processes and resulting outcomes (Fridgen et al., 2018). This study integrates theoretical synthesis with the qualitative interview analysis and empirical validation to build upon earlier reviews by delivering a broader evidence-based comprehension of blockchain adoption.

Theoretical Implications

The study delivers theoretical insights and practical applications that benefit researchers, business leaders, and policymakers who aim to understand and manage blockchain adoption. The Antecedents-Decisions-Outcomes (ADO) framework provides a new lens for blockchain adoption research through its structured multi-stage analysis of adoption decision drivers. Combining systematic literature review (SLR) findings with qualitative interviews enhances the study's relevance by producing outcomes that meet academic rigor and practical application requirements.

This research enriches blockchain adoption studies with theoretical insights by broadening the comprehension of adoption decisions. It moves beyond technological drivers and barriers to emphasize managerial intent, industry-specific needs, and external catalysts as important factors in adoption decisions. Blockchain adoption unfolds through multiple stages and requires iteration while being shaped by regulatory changes, technological advancements, and market environment shifts. This research extends existing innovation adoption theories like the Technology-Organization-Environment (TOE) framework and Diffusion of Innovations (DOI)

theory by empirically validating factors specific to blockchain adoption. While other models broadly address technology adoption, the ADO framework delivers a detailed, industry-neutral approach for analyzing blockchain adoption across various sectors. The research provides a base for future blockchain studies that analyze adoption patterns across various organizational levels, such as individuals and firms.

Practical Implications

The results of this research offer important guidance to business leaders, policymakers, and information systems professionals who assess blockchain adoption. The combination of systematic literature review, case studies, and empirical survey validation creates a detailed picture of blockchain adoption patterns across various sectors (Treiblmaier, 2019; Wamba & Queiroz, 2022). Organizations must examine blockchain technology beyond its technical capabilities to ensure it fits their strategic business goals. Iansiti & Lakhani's 2017 case studies of blockchain-native startups show firms creating new business models based on decentralization, transparency, and automation. Established organizations' survey responses identify the difficulties of merging blockchain technology with legacy systems while stressing the necessity of managing change carefully and securing stakeholder commitment (Queiroz et al., 2020).

A crucial implication is the necessity of workforce preparedness through training. According to survey results, employee resistance and insufficient specialized blockchain expertise remain a major obstacle to implementing blockchain technology (Fridgen et al., 2018). Organizations aiming to deploy blockchain solutions must establish broad training initiatives to close knowledge gaps and enable seamless adoption (Xu et al., 2023). This research highlights how regulatory clarity is crucial in encouraging blockchain technology adoption. Survey respondents identified compliance uncertainty as their main obstacle despite case study firms

operating within flexible regulatory frameworks (Lacity, 2018). The findings from Wamba and Queiroz (2022) indicate that companies must work actively with lawmakers to push for more defined legal structures that enable blockchain innovation. Through this study, decision-makers gain access to a validated framework that helps them assess blockchain adoption by analyzing industry context, organizational readiness, and anticipated business model changes. The following section examines how different policy and regulatory aspects influence the adoption patterns of blockchain technology.

Policy and Regulatory Considerations

The adoption of blockchain technology depends heavily on regulatory frameworks that have the power to support or obstruct its implementation. Although certain jurisdictions implemented blockchain-friendly regulations, others continued to show uncertainty, which created obstacles for organizations that needed regulatory clarity (Lacity, 2018). The research demonstrates that regulatory uncertainty is a significant obstacle to blockchain adoption in highly regulated fields like finance and healthcare (Queiroz et al., 2020). The research on startup case studies reveals that blockchain-based business model developers work in adaptable environments, enabling them to innovate with limited legal boundaries. Survey results from established organizations show compliance challenges as a significant obstacle to blockchain adoption, according to Wamba and Queiroz (2022).

Regulatory frameworks require uniform policies to function effectively across all industries. Blockchain technology functions across various international boundaries, which forces firms to manage complicated regulatory systems that often conflict with one another, according to Treiblmaier (2019). Policymakers must drive regulatory harmonization efforts to prevent blockchain-based innovations from hampered by inconsistent legal requirements

(Fridgen et al., 2018). Businesses must work with regulators to develop policies encouraging responsible blockchain adoption while addressing security and fraud concerns and ensuring compliance (Xu et al., 2023).

Regulations on data privacy and security are crucial considerations. Compliance with data protection laws like GDPR becomes problematic because blockchain operates through decentralization and unchangeable records (Iansiti & Lakhani, 2017). Organizations must find a middle ground between transparency benefits and user information protection through hybrid blockchain solutions that enable controlled access and legal compliance (Queiroz et al., 2020). This study also demonstrates that public-private partnerships play a crucial role in developing blockchain policies. Governments, regulatory bodies, and industry leaders need to collaborate to create legal frameworks that promote innovation while minimizing risks (Wamba & Queiroz, 2022). Organizations that address regulatory concerns proactively can speed up blockchain adoption and maintain long-term compliance and operational stability. The forthcoming section reviews this study's advantages and shortcomings and proposes future research paths.

Limitations of the Study

The study delivers a detailed analysis of blockchain adoption through systematic literature review (SLR) and case studies with empirical survey validation but still has several limitations. The case studies examined solely blockchain-native startups, which may restrict how well the findings apply to bigger established companies (Lacity, 2018). Broader insights from the survey of 24 organizations were obtained, but would benefit from more extensive findings if it included a larger sample size or additional qualitative case studies (Wamba & Queiroz, 2022). The survey sample could also be enhanced with a more broad-based industry representation. Although the survey attracted participants from various sectors, companies typically belonged to

the finance and supply chain management industries. For instance, Queiroz et al. (2020) suggest that future studies should assess blockchain adoption within less represented sectors like education and government services to develop better insights into overall adoption trends.

5. Conclusion and Future Research

Although this research offers groundwork for comprehending blockchain adoption, additional investigation remains necessary in multiple aspects. Future research should focus on longitudinal studies examining blockchain technology adoption processes. The research captures blockchain adoption factors at one moment. However, future studies should monitor organizations over time to study blockchain implementation changes and their extended effects on business models and industry practices (Fridgen et al., 2018). Cross-industry comparative research represents a field with potential expansion opportunities. The research encompasses multiple sectors yet fails to adequately represent certain industries, including healthcare, education, and real estate. Subsequent studies should focus on adopting blockchain in different industries to discover unique challenges and opportunities within each sector (Queiroz et al., 2020). Future research can investigate how regional regulatory environments affect the implementation of blockchain technology across different geographic areas (Lacity, 2018).

Researchers need to examine how new blockchain governance models affect decisions about blockchain adoption. As DAOs and smart contract governance models become more prominent, researchers and practitioners must study the effect of governance structures on blockchain scalability and adoption to gain valuable insights (Treiblmaier, 2019). Future research can expand the understanding of blockchain adoption by applying more theoretical frameworks. This study's application of the Antecedents-Decisions-Outcomes (ADO) framework benefits from additional insights about technological and organizational factors through integration with

the Technology-Organization-Environment (TOE) framework and Diffusion of Innovation (DOI) theory (Xu et al., 2023). Using several frameworks together provides a more comprehensive method to evaluate blockchain adoption patterns. Future research that develops these areas will build upon this study's findings to enhance understanding of blockchain adoption and its effects on businesses, technology strategists, and policymakers.

6. Declarations

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Appendix A

	Article	Theory/Constructs/ Framework	Methodology	Theme/Industry Focus	Contributions
1	Albahri, A., Duhaim, A., Fadhel, M., Alnoor, A., Baqer, N., Alzubaidi, L., Albahri, O., Alamoodi, A., Bai, J., Salhi, A., Santamaría, J., Ouyang, C., Gupta, A., Gu, Y., Deveci, M. (2023). A systematic review of trustworthy and explainable artificial intelligence in healthcare: Assessment of quality, bias risk, and data fusion. Information Fusion, 96, 15662535.	Trust and Bias in AI Models	Systematic Review	AI in Healthcare, Explainability	Evaluate AI trustworthiness in healthcare by assessing bias, data fusion, and transparency.
2	Andersen, J., Bogusz, C. (2019). Self-organizing in blockchain infrastructures: Generativity through shifting objectives and forking. Journal of the Association for Information Systems, 20(9), 15369323.	Decentralized Decision-Making	Case Study	Blockchain Governance	Analyzes how self-organizing and forking impact blockchain infrastructure and governance.
3	Attaran, M. (2023). The impact of 5G on the evolution of intelligent automation and industry digitization. Journal of Ambient Intelligence and Humanized Computing, 14(5), 18685145.	5G and Industry 4.0	Conceptual Study	5G, Intelligent Automation	Discusses how 5G enables industry digitization and intelligent automation.
4	Babich, V., Hilary, G. (2020). Distributed ledgers and operations: What operations management researchers should know about blockchain technology. Manufacturing and Service Operations Management, 22(2), 15265498.	Blockchain for Supply Chain Efficiency	Literature Review	Blockchain & Operations Management	Reviews blockchain's role in improving operations and supply chain efficiency.
5	Beck, R., Müller-Bloch, C., King, J. (2018). Governance in the blockchain economy: A framework and research agenda. Journal of the Association for Information Systems, 19(10), 15369323.	Blockchain Governance Framework	Conceptual Framework	Blockchain Governance, Decentralization	Proposes a research agenda on governance structures in blockchain ecosystems.
6	Chang, S., Chen, Y., Lu, M. (2019). Supply chain re-engineering using blockchain technology: A smart contract-based tracking process. Technological Forecasting and Social Change, 144, 00401625.	Blockchain for Supply Chain Re-engineering	Case Study	Supply Chain, Smart Contracts	Examines blockchain-based smart contracts for tracking supply chain operations.
7	Chanson, M., Bogner, A., Bilgeri, D., Fleisch, E., Wortmann, F. (2019). Blockchain for the IoT: Privacy-preserving protection of sensor data. Journal of the Association for Information Systems, 20(9), 15583457.	Privacy-Preserving Blockchain Solutions	Conceptual Framework	IoT, Blockchain Privacy	Proposes a blockchain-based privacy-preserving framework for IoT sensor data.
8	Chen, Y. (2018). Blockchain tokens and the potential democratization of entrepreneurship and innovation. Business Horizons, 61(4), 00076813.	Tokenization in Entrepreneurship	Conceptual Study	Blockchain, Entrepreneurship	Discusses how blockchain tokens can democratize

					access to innovation and funding.
9	Cho, S., Lee, K., Cheong, A., No, W., Vasarhelyi, M. (2021). Chain of Values: Examining the Economic Impacts of Blockchain on the Value-Added Tax System. Journal of Management Information Systems, 38(2), 1557928X.	Blockchain in Economic Systems	Empirical Study	Blockchain & Tax Systems	Analyzes blockchain's impact on VAT efficiency and fraud prevention.
10	Choi, T. (2023). Supply chain financing using blockchain: impacts on supply chains selling fashionable products. Annals of Operations Research, 331(1), 15729338.	Blockchain for Supply Chain Finance	Theoretical Model	Supply Chain Finance, Fashion Industry	Examines blockchain-enabled financing models for fashion supply chains.
11	Chong, A., Lim, E., Hua, X., Zheng, S., Tan, C. (2019). Business on chain: A comparative case study of five blockchain-inspired business models. Journal of the Association for Information Systems, 20(9), 15369323.	Blockchain and Business Model Innovation	Case Study	Blockchain Business Models	Compares five blockchain-based business models and their strategic implications.
12	Cole, R., Stevenson, M., Aitken, J. (2019). Blockchain technology: implications for operations and supply chain management. Supply Chain Management, 24(4), 13598546.	Blockchain & Operations Management	Literature Review	Supply Chain Management, Blockchain	Analyzes blockchain's impact on efficiency and trust in supply chain management.
13	De Keyser, A., Köcher, S., Alkire (née Nasr), L., Verbeeck, C., Kandampully, J. (2019). Frontline Service Technology infusion: Conceptual Archetypes and Future Research Directions. Journal of Service Management, 30(1), 17575818.	Technology Infusion in Services	Conceptual Framework	Service Technology, Blockchain	Identifies blockchain's role in enhancing customer service and operational efficiency.
14	Dobrovnik, M., Herold, D., Fürst, E., Kummer, S. (2018). Blockchain for and in Logistics: What to Adopt and Where to Start. Logistics, 2(3).	Adoption Strategies in Blockchain	Systematic Review	Blockchain in Logistics	Explores blockchain adoption strategies and key logistics use cases.
15	Drummer, D., Neumann, D. (2020). Is code law? Current legal and technical adoption issues and remedies for blockchain-enabled smart contracts. Journal of Information Technology, 35(4), 14664437.	Code as Law in Blockchain	Legal & Technical Analysis	Smart Contracts, Legal Aspects	Discusses legal challenges and solutions for smart contract implementation.
16	Du, W., Pan, S., Leidner, D., Ying, W. (2019). Affordances, experimentation, and actualization of FinTech: A blockchain implementation study. Journal of Strategic Information Systems, 28(1), 09638687.	Affordance Theory	Case Study	FinTech, Blockchain Implementation	Examines blockchain adoption in FinTech through experimentation and actualization processes.
17	Fisch, C. (2019). Initial coin offerings (ICOs) to finance new ventures. Journal of Business Venturing, 34(1), 08839026.	Entrepreneurial Finance Theory	Empirical Study	ICOs, Venture Financing	Analyzes the effectiveness of ICOs as a fundraising mechanism for startups.

18	Francisco, K., Swanson, D. (2018). The Supply Chain Has No Clothes: Technology Adoption of Blockchain for Supply Chain Transparency. Logistics, 2(1).	Blockchain Adoption Framework	Conceptual Study	Supply Chain Transparency	Discusses blockchain's role in increasing supply chain transparency and efficiency.
19	Ghiasi, M., Niknam, T., Wang, Z., Mehrandezh, M., Dehghani, M., Ghadimi, N. (2023). A comprehensive review of cyber-attacks and defense mechanisms for improving smart grid energy systems security: Past, present and future. Electric Power Systems Research, 215, 03787796.	Cybersecurity Defense Mechanisms	Systematic Literature Review	Smart Grid Security, Cybersecurity	Reviews cyber threats in smart grids and blockchain-based security measures.
20	Gomber, P., Kauffman, R., Parker, C., Weber, B. (2018). On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services. Journal of Management Information Systems, 35(1), 1557928X.	Disruptive Innovation Theory	Review Paper	FinTech Innovation	Analyzes how FinTech is disrupting traditional financial services through blockchain.
21	Hawlitschek, F., Notheisen, B., Teubner, T. (2018). The limits of trust-free systems: A literature review on blockchain technology and trust in the sharing economy. Electronic Commerce Research and Applications, 29, 15674223.	Trust Theory in Blockchain	Literature Review	Blockchain, Trust, Sharing Economy	Explores the role of trust in blockchain systems and its impact on the sharing economy.
22	Helm, J. (2021). Distributed Internet voting architecture: A thin client approach to Internet voting. Journal of Information Technology, 36(2), 14664437.	Secure Voting Systems	Conceptual Framework	E-Voting, Blockchain	Discusses blockchain-based thin-client architectures for secure online voting.
23	Hendershott, T., Zhang, X., Leon Zhao, J., Zheng, Z. (2021). Fintech as a game changer: Overview of research frontiers. Information Systems Research, 32(1), 15265536.	FinTech Disruption in Financial Markets	Review Paper	FinTech Research Trends	Maps key research directions in FinTech and blockchain adoption.
24	Huynh-The, T., Gadekallu, T., Wang, W., Yenduri, G., Ranaweera, P., Pham, Q., da Costa, D., Liyanage, M. (2023). Blockchain for the metaverse: A Review. Future Generation Computer Systems, 143, 0167739X.	Blockchain for Virtual Worlds	Systematic Review	Metaverse, Blockchain	Discusses blockchain applications and challenges in metaverse environments.
25	Huynh-The, T., Pham, Q., Pham, X., Nguyen, T., Han, Z., Kim, D. (2023). Artificial intelligence for the metaverse: A survey. Engineering Applications of Artificial Intelligence, 117, 09521976.	AI-Blockchain Integration	Survey-Based Study	AI in the Metaverse	Explores the role of AI in metaverse development, focusing on blockchain integration.
26	Iansiti, M., Lakhani, K. (2017). The truth about blockchain. Harvard Business Review, 2017(January-February), 00178012.	Disruptive Innovation Theory	Conceptual Study	Blockchain, Business Transformation	Discusses blockchain's potential to redefine business processes and its

					challenges to widespread adoption.
27	Ilk, N., Shang, G., Fan, S., Leon Zhao, J. (2021). Stability of transaction fees in bitcoin: A supply and demand perspective. MIS Quarterly: Management Information Systems, 45(2), 21629730.	Supply & Demand Economics	Empirical Analysis	Cryptocurrency, Bitcoin Transactions	Analyzes Bitcoin transaction fees and their relationship with supply and demand dynamics.
28	Kohli, R., Liang, T. (2021). Special Section: Strategic Integration of Blockchain Technology into Organizations. Journal of Management Information Systems, 38(2), 1557928X.	Strategic Integration of Blockchain	Editorial & Conceptual Review	Blockchain, Organizational Strategy	Highlights key research areas and challenges in integrating blockchain into organizations.
29	Lacity, M. (2018). Addressing key challenges to making enterprise blockchain applications a reality. MIS Quarterly Executive, 17(3), 15401979.	Adoption Challenges in Blockchain	Case Study	Enterprise Blockchain Applications	Discusses barriers to enterprise blockchain implementation and solutions for overcoming them.
30	Liang, T., Kohli, R., Huang, H., Li, Z. (2021). What Drives the Adoption of the Blockchain Technology? A Fit-Viability Perspective. Journal of Management Information Systems, 38(2), 1557928X.	Fit-Viability Theory	Empirical Study	Blockchain Adoption	Examines factors influencing blockchain adoption using a fit-viability framework.
31	Lu, Y. (2018). Blockchain and the related issues: a review of current research topics. Journal of Management Analytics, 5(4), 23270039.	Emerging Topics in Blockchain	Systematic Literature Review	Blockchain Research Trends	Summarizes key research directions and challenges in blockchain technology.
32	Min, H. (2019). Blockchain technology for enhancing supply chain resilience. Business Horizons, 62(1), 00076813.	Blockchain for Supply Chain Resilience	Conceptual Framework	Supply Chain Resilience, Blockchain	Discusses how blockchain can improve supply chain resilience and efficiency.
33	Montecchi, M., Plangger, K., Etter, M. (2019). It is real, trust me! Establishing supply chain provenance using blockchain. Business Horizons, 62(3), 00076813.	Trust and Transparency in Blockchain	Empirical Study	Supply Chain Provenance, Blockchain	Explores how blockchain enhances supply chain trust and provenance verification.
34	Morkunas, V., Paschen, J., Boon, E. (2019). How blockchain technologies impact your business model. Business Horizons, 62(3), 00076813.	Blockchain & Business Model Innovation	Conceptual Study	Business Models, Blockchain	Analyzes how blockchain influences business models and value creation.
35	Olsen, T., Tomlin, B. (2020). Industry 4.0: Opportunities and challenges for operations management. Manufacturing and Service Operations Management, 22(1), 15265498.	Digital Transformation & Operations	Conceptual Study	Industry 4.0, Operations Management	Identifies challenges and opportunities of Industry 4.0 technologies in operations management.
36	Pazaitis, A., De Filippi, P., Kostakis, V. (2017). Blockchain and value systems in the sharing economy:	Decentralized Value Systems	Case Study	Sharing Economy, Blockchain Governance	Explores Backfeed as a blockchain-based governance model for

	The illustrative case of Backfeed. Technological Forecasting and Social Change, 125, 00401625.				decentralized value creation.
37	Pilkington, M. (2016). Blockchain technology: Principles and applications. Research Handbook on Digital Transformations.	Blockchain as a Digital Transformation Tool	Conceptual Study	Blockchain Technology	Reviews blockchain principles and their application in digital transformations.
38	Queiroz, M., Telles, R., Bonilla, S. (2020). Blockchain and supply chain management integration: a systematic review of the literature. Supply Chain Management, 25(2), 13598546.	Blockchain-SCM Integration	Systematic Literature Review	Supply Chain Management	Identifies key benefits and barriers of blockchain adoption in supply chains.
39	Renwick, R., Gleasure, R. (2021). Those who control the code control the rules: How different perspectives of privacy are being written into the code of blockchain systems. Journal of Information Technology, 36(1), 14664437.	Privacy Frameworks in Blockchain	Conceptual Analysis	Privacy, Blockchain Governance	Discusses the implications of coding privacy policies into blockchain protocols.
40	Rossi, M., Mueller-Bloch, C., Thatcher, J., Beck, R. (2019). Blockchain research in information systems: Current trends and an inclusive future research agenda. Journal of the Association for Information Systems, 20(9), 15369323.	Future Research Directions	Systematic Review	Information Systems, Blockchain	Maps current blockchain research trends in IS and proposes an inclusive research.
41	Sarker, S., Henningsson, S., Jensen, T., Hedman, J. (2021). Use Of Blockchain As A Resource For Combating Corruption In Global Shipping: An Interpretive Case Study. *Journal of Management Information Systems, 38*(2), 1557928X.	Resource-Based View (RBV)	Interpretive Case Study	Global Shipping, Anti-Corruption	Examines how blockchain can be used to mitigate corruption in shipping supply chains.
42	Su, C., Qin, M., Tao, R., Umar, M. (2020). Financial implications of fourth industrial revolution: Can bitcoin improve prospects of energy investment?. *Technological Forecasting and Social Change, 158*, 00401625.	Bitcoin as an Alternative Investment	Empirical Analysis	Financial Markets, Bitcoin, Energy Investment	Investigates Bitcoin's role in improving energy investment prospects amid financial shifts.
43	Tapscott, D., Tapscott, A. (2017). How blockchain will change organizations. *MIT Sloan Management Review, 58*(2), 15329194.	Blockchain & Organizational Structures	Conceptual Paper	Organizational Change, Blockchain	Discusses how blockchain decentralization impacts corporate governance and structures.
44	Treiblmaier, H. (2018). The impact of the blockchain on the supply chain: a theory-based research framework and a call for action. *Supply Chain Management, 23*(6), 13598546.	Blockchain Impact on SCM	Theory-Based Research Framework	Supply Chain Management	Proposes a theoretical framework for blockchain adoption in supply chain processes.

45	Wang, Y., Han, J., Beynon-Davies, P. (2019). Understanding blockchain technology for future supply chains: a systematic literature review and research agenda. *Supply Chain Management, 24*(1), 13598546.	Blockchain Adoption in SCM	Systematic Literature Review	Future Supply Chains	Identifies research gaps and future trends for blockchain in supply chain management.
46					
47	Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T., Shen, X. (2023). A Survey on Metaverse: Fundamentals, Security, and Privacy. *IEEE Communications Surveys and Tutorials, 25*(1), 1553877X.	Privacy-Preserving Techniques, Blockchain in Metaverse	Survey-Based Study	Metaverse, Security & Privacy	Identifies privacy and security challenges in metaverse environments and how blockchain can address them.
48	Warner, K., Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning, 52*(3), 18731872.	Dynamic Capabilities Theory	Conceptual Framework	Digital Transformation, Strategic Renewal	Digital transformation requires iterative capability-building and strategic adaptability.
49	Wu, X., Fan, Z., Cao, B. (2023). An analysis of strategies for adopting blockchain technology in the fresh product supply chain. *International Journal of Production Research, 61*(11), 1366588X.	Supply Chain Management, Blockchain Adoption Strategies	Empirical Study	Fresh Product Supply Chain	Examines strategic blockchain adoption for traceability and efficiency in fresh product supply chains.
50	Xu, M., Ng, W., Lim, W., Kang, J., Xiong, Z., Niyato, D., Yang, Q., Shen, X., Miao, C. (2023). A Full Dive Into Realizing the Edge-Enabled Metaverse: Visions, Enabling Technologies, and Challenges. *IEEE Communications Surveys and Tutorials, 25*(1), 1553877X.	Blockchain and Edge Computing Integration	Systematic Review	Edge Computing, Metaverse	Discusses challenges and enabling technologies for edge computing in metaverse environments.
51	Xu, X., Zhang, M., Dou, G., Yu, Y. (2023). Coordination of a supply chain with an online platform considering green technology in the blockchain era. *International Journal of Production Research, 61*(11), 1366588X.	Game Theory in Blockchain Supply Chains	Theoretical Model	Green Technology, Supply Chain Management	Explores the impact of blockchain-enabled green supply chains on coordination mechanisms.
52	Yin, H., Langenheldt, K., Harlev, M., Mukkamala, R., Vatrapu, R. (2019). Regulating Cryptocurrencies: A Supervised Machine Learning Approach to De-Anonymizing the Bitcoin Blockchain. *Journal of Management Information Systems, 36*(1), 1557928X.	Supervised Learning for Blockchain Analytics	Machine Learning Analysis	Cryptocurrency Regulation, Bitcoin Privacy	Develops machine learning techniques to analyze and de-anonymize Bitcoin transactions.
53	Zhang, K., Tian, J., Xiao, H., Zhao, Y., Zhao, W., Chen, J. (2023). A Numerical Splitting and Adaptive Privacy Budget-Allocation-Based LDP Mechanism for Privacy Preservation in Blockchain-Powered IoT. *IEEE Internet of Things Journal, 10*(8), 23274662.	Local Differential Privacy (LDP)	Algorithmic Study	Blockchain Privacy, IoT Security	Proposes an LDP mechanism to enhance privacy in blockchain-integrated IoT systems.

54	Zhang, W., Wei, C., Jiang, Q., Peng, C., Zhao, J. (2021). Beyond the Block: A Novel Blockchain-Based Technical Model for Long-Term Care Insurance. *Journal of Management Information Systems, 38*(2), 1557928X.	Blockchain for Secure Insurance Models	Conceptual Model	Blockchain & Insurance	Proposes a blockchain-based solution for improving transparency and efficiency in long-term care insurance.
55	Albahri, A., Duhaim, A., Fadhel, M., Alnoor, A., Baqer, N., Alzubaidi, L., & Alamoodi, A. (2023). A systematic review of trustworthy and explainable artificial intelligence in healthcare: Assessment of quality, bias risk, and data fusion. *Information Fusion, 96*, 15662535.	Trust and Bias in AI Models	Systematic Review	AI in Healthcare, Explainability	Evaluates AI trustworthiness in healthcare by assessing bias, data fusion, and transparency.
56	Andersen, J., & Bogusz, C. (2019). Self-organizing in blockchain infrastructures: Generativity through shifting objectives and forking. *Journal of the Association for Information Systems, 20*(9), 15369323.	Decentralized Decision-Making	Case Study	Blockchain Governance	Analyzes how self-organizing and forking impact blockchain infrastructure and governance.
57	Attaran, M. (2023). The impact of 5G on the evolution of intelligent automation and industry digitization. *Journal of Ambient Intelligence and Humanized Computing, 14*(5), 18685145.	5G and Industry 4.0	Conceptual Study	5G, Intelligent Automation	Discusses how 5G enables industry digitization and intelligent automation.
58	Babich, V., & Hilary, G. (2020). Distributed ledgers and operations: What operations management researchers should know about blockchain technology. *Manufacturing and Service Operations Management, 22*(2), 15265498.	Blockchain for Supply Chain Efficiency	Literature Review	Blockchain & Operations Management	Reviews blockchain's role in improving operations and supply chain efficiency.
59	Beck, R., Müller-Bloch, C., & King, J. (2018). Governance in the blockchain economy: A framework and research agenda. *Journal of the Association for Information Systems, 19*(10), 15369323.	Blockchain Governance Framework	Conceptual Framework	Blockchain Governance, Decentralization	Proposes a research agenda on governance structures in blockchain ecosystems.
60	Chang, S., Chen, Y., & Lu, M. (2019). Supply chain re-engineering using blockchain technology: A case of smart contract based tracking process. *Technological Forecasting and Social Change, 144*, 00401625.	Blockchain for Supply Chain Re-engineering	Case Study	Supply Chain, Smart Contracts	Examines blockchain-based smart contracts for tracking supply chain operations.
61	Chanson, M., Bogner, A., Bilgeri, D., Fleisch, E., & Wortmann, F. (2019). Blockchain for the IoT: Privacy-preserving protection of sensor data. *Journal of the Association for Information Systems, 20*(9), 15583457.	Privacy-Preserving Blockchain Solutions	Conceptual Framework	IoT, Blockchain Privacy	Proposes a blockchain-based privacy-preserving framework for IoT sensor data.
62	Chen, Y. (2018). Blockchain tokens and the potential democratization of entrepreneurship and innovation. *Business Horizons, 61*(4), 00076813.	Tokenization in Entrepreneurship	Conceptual Study	Blockchain, Entrepreneurship	Discusses how blockchain tokens can democratize access to innovation and funding.

63	Cho, S., Lee, K., Cheong, A., No, W., & Vasarhelyi, M. (2021). Chain of values: Examining the economic impacts of blockchain on the value-added tax system. *Journal of Management Information Systems, 38*(2), 1557928X.	Blockchain in Economic Systems	Empirical Study	Blockchain & Tax Systems	Analyzes blockchain's impact on VAT efficiency and fraud prevention.
64	Choi, T. (2023). Supply chain financing using blockchain: Impacts on supply chains selling fashionable products. *Annals of Operations Research, 331*(1), 15729338.	Blockchain for Supply Chain Finance	Theoretical Model	Supply Chain Finance, Fashion Industry	Examines blockchain-enabled financing models for fashion supply chains.
65	Chong, A., Lim, E., Hua, X., Zheng, S., & Tan, C. (2019). Business on chain: A comparative case study of five blockchain-inspired business models. *Journal of the Association for Information Systems, 20*(9), 15369323.	Blockchain and Business Model Innovation	Case Study	Blockchain Business Models	Compares five blockchain-based business models and their strategic implications.
66	Cole, R., Stevenson, M., & Aitken, J. (2019). Blockchain technology: Implications for operations and supply chain management. *Supply Chain Management, 24*(4), 13598546.	Blockchain & Operations Management	Literature Review	Supply Chain Management, Blockchain	Analyzes blockchain's impact on efficiency and trust in supply chain management.
67	De Keyser, A., Köcher, S., Alkire (née Nasr), L., Verbeeck, C., & Kandampully, J. (2019). Frontline service technology infusion: Conceptual archetypes and future research directions. *Journal of Service Management, 30*(1), 17575818.	Technology Infusion in Services	Conceptual Framework	Service Technology, Blockchain	Identifies blockchain's role in enhancing customer service and operational efficiency.
68	Dobrovnik, M., Herold, D., Fürst, E., & Kummer, S. (2018). Blockchain for and in logistics: What to adopt and where to start. *Logistics, 2*(3).	Adoption Strategies in Blockchain	Systematic Review	Blockchain in Logistics	Explores blockchain adoption strategies and key logistics use cases.
69	Drummer, D., & Neumann, D. (2020). Is code law? Current legal and technical adoption issues and remedies for blockchain-enabled smart contracts. *Journal of Information Technology, 35*(4), 14664437.	Code as Law in Blockchain	Legal & Technical Analysis	Smart Contracts, Legal Aspects	Discusses legal challenges and solutions for smart contract implementation.
70	Du, W., Pan, S., Leidner, D., & Ying, W. (2019). Affordances, experimentation and actualization of FinTech: A blockchain implementation study. *Journal of Strategic Information Systems, 28(1),* 09638687.	Affordance Theory	Case Study	FinTech, Blockchain Implementation	Examines blockchain adoption in FinTech through experimentation and actualization processes.
71	Fisch, C. (2019). Initial coin offerings (ICOs) to finance new ventures. *Journal of Business Venturing, 34(1),* 08839026.	Entrepreneurial Finance Theory	Empirical Study	ICOs, Venture Financing	Analyzes the effectiveness of ICOs as a fundraising mechanism for startups.
72	Francisco, K., & Swanson, D. (2018). The supply chain has no clothes: Technology adoption of blockchain for supply chain transparency. *Logistics, 2(1).*	Blockchain Adoption Framework	Conceptual Study	Supply Chain Transparency	Discusses blockchain's role in increasing supply

					chain transparency and efficiency.
73	Ghiasi, M., Niknam, T., Wang, Z., Mehrandezh, M., Dehghani, M., & Ghadimi, N. (2023). A comprehensive review of cyber-attacks and defense mechanisms for improving security in smart grid energy systems: Past, present and future. *Electric Power Systems Research, 215,* 03787796.	Cybersecurity Defense Mechanisms	Systematic Literature Review	Smart Grid Security, Cybersecurity	Reviews cyber threats in smart grids and blockchain-based security measures.
74	Gomber, P., Kauffman, R., Parker, C., & Weber, B. (2018). On the Fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of Management Information Systems, 35(1),* 1557928X.	Disruptive Innovation Theory	Review Paper	FinTech Innovation	Analyzes how FinTech is disrupting traditional financial services through blockchain.
75	Hawlitschek, F., Notheisen, B., & Teubner, T. (2018). The limits of trust-free systems: A literature review on blockchain technology and trust in the sharing economy. *Electronic Commerce Research and Applications, 29,* 15674223.	Trust Theory in Blockchain	Literature Review	Blockchain, Trust, Sharing Economy	Explores the role of trust in blockchain systems and its impact on the sharing economy.
76	Helm, J. (2021). Distributed internet voting architecture: A thin client approach to internet voting. *Journal of Information Technology, 36(2),* 14664437.	Secure Voting Systems	Conceptual Framework	E-Voting, Blockchain	Discusses blockchain-based thin-client architectures for secure online voting.
77	Hendershott, T., Zhang, X., Leon Zhao, J., & Zheng, Z. (2021). Fintech as a game changer: Overview of research frontiers. *Information Systems Research, 32(1),* 15265536.	FinTech Disruption in Financial Markets	Review Paper	FinTech Research Trends	Maps key research directions in FinTech and blockchain adoption.
78	Huynh-The, T., Gadekallu, T., Wang, W., Yenduri, G., Ranaweera, P., Pham, Q., da Costa, D., & Liyanage, M. (2023). Blockchain for the metaverse: A review. *Future Generation Computer Systems, 143,* 0167739X.	Blockchain for Virtual Worlds	Systematic Review	Metaverse, Blockchain	Discusses blockchain applications and challenges in metaverse environments.
79	Huynh-The, T., Pham, Q., Pham, X., Nguyen, T., Han, Z., & Kim, D. (2023). Artificial intelligence for the metaverse: A survey. *Engineering Applications of Artificial Intelligence, 117,* 09521976.	AI-Blockchain Integration	Survey-Based Study	AI in the Metaverse	Explores the role of AI in metaverse development, focusing on blockchain integration.
80	Iansiti, M., & Lakhani, K. (2017). The truth about blockchain. *Harvard Business Review, 2017*(January-February), 00178012.	Disruptive Innovation Theory	Conceptual Study	Blockchain, Business Transformation	Discusses blockchain's potential to redefine business processes and its challenges to widespread adoption.

81	Ilk, N., Shang, G., Fan, S., & Leon Zhao, J. (2021). Stability of transaction fees in bitcoin: A supply and demand perspective. *MIS Quarterly: Management Information Systems, 45*(2), 21629730.	Supply & Demand Economics	Empirical Analysis	Cryptocurrency, Bitcoin Transactions	Analyzes Bitcoin transaction fees and their relationship with supply and demand dynamics.
82	Kohli, R., & Liang, T. (2021). Special section: Strategic integration of blockchain technology into organizations. *Journal of Management Information Systems, 38*(2), 1557928X.	Strategic Integration of Blockchain	Editorial & Conceptual Review	Blockchain, Organizational Strategy	Highlights key research areas and challenges in integrating blockchain into organizations.
83	Lacity, M. (2018). Addressing key challenges to making enterprise blockchain applications a reality. *MIS Quarterly Executive, 17*(3), 15401979.	Adoption Challenges in Blockchain	Case Study	Enterprise Blockchain Applications	Discusses barriers to enterprise blockchain implementation and solutions for overcoming them.
84	Liang, T., Kohli, R., Huang, H., & Li, Z. (2021). What drives the adoption of blockchain technology? A fit-viability perspective. *Journal of Management Information Systems, 38*(2), 1557928X.	Fit-Viability Theory	Empirical Study	Blockchain Adoption	Examines factors influencing blockchain adoption using a fit-viability framework.
85	Lu, Y. (2018). Blockchain and the related issues: A review of current research topics. *Journal of Management Analytics, 5*(4), 23270039.	Emerging Topics in Blockchain	Systematic Literature Review	Blockchain Research Trends	Summarizes key research directions and challenges in blockchain technology.
86	Min, H. (2019). Blockchain technology for enhancing supply chain resilience. *Business Horizons, 62*(1), 00076813.	Blockchain for Supply Chain Resilience	Conceptual Framework	Supply Chain Resilience, Blockchain	Discusses how blockchain can improve supply chain resilience and efficiency.
87	Montecchi, M., Plangger, K., & Etter, M. (2019). It is real, trust me! Establishing supply chain provenance using blockchain. *Business Horizons, 62*(3), 00076813.	Trust and Transparency in Blockchain	Empirical Study	Supply Chain Provenance, Blockchain	Explores how blockchain enhances supply chain trust and provenance verification.
88	Morkunas, V., Paschen, J., & Boon, E. (2019). How blockchain technologies impact your business model. *Business Horizons, 62*(3), 00076813.	Blockchain & Business Model Innovation	Conceptual Study	Business Models, Blockchain	Analyzes how blockchain influences business models and value creation.
89	Olsen, T., & Tomlin, B. (2020). Industry 4.0: Opportunities and challenges for operations management. *Manufacturing and Service Operations Management, 22*(1), 15265498.	Digital Transformation & Operations	Conceptual Study	Industry 4.0, Operations Management	Identifies challenges and opportunities of Industry 4.0 technologies in operations management.
90	Pazaitis, A., De Filippi, P., & Kostakis, V. (2017). Blockchain and value systems in the sharing economy: The illustrative case of Backfeed. *Technological Forecasting and Social Change, 125*, 00401625.	Decentralized Value Systems	Case Study	Sharing Economy, Blockchain Governance	Explores Backfeed as a blockchain-based governance model for decentralized value creation.

91	Pilkington, M. (2016). Blockchain technology: Principles and applications. *Research Handbook on Digital Transformations.*	Blockchain as a Digital Transformation Tool	Conceptual Study	Blockchain Technology	Reviews blockchain principles and their application in digital transformations.
92	Queiroz, M., Telles, R., & Bonilla, S. (2020). Blockchain and supply chain management integration: A systematic review of the literature. *Supply Chain Management, 25*(2), 13598546.	Blockchain-SCM Integration	Systematic Literature Review	Supply Chain Management	Identifies key benefits and barriers of blockchain adoption in supply chains.
93	Renwick, R., & Gleasure, R. (2021). Those who control the code control the rules: How different perspectives of privacy are being written into the code of blockchain systems. *Journal of Information Technology, 36*(1), 14664437.	Privacy Frameworks in Blockchain	Conceptual Analysis	Privacy, Blockchain Governance	Discusses the implications of coding privacy policies into blockchain protocols.
94	Rossi, M., Mueller-Bloch, C., Thatcher, J., & Beck, R. (2019). Blockchain research in information systems: Current trends and an inclusive future research agenda. *Journal of the Association for Information Systems, 20*(9), 15369323.	Future Research Directions	Systematic Review	Information Systems, Blockchain	Maps current blockchain research trends in IS and proposes an inclusive research agenda.
95	Sarker, S., Henningsson, S., Jensen, T., & Hedman, J. (2021). Use of blockchain as a resource for combating corruption in global shipping: An interpretive case study. *Journal of Management Information Systems, 38*(2), 1557928X.	Resource-Based View (RBV)	Interpretive Case Study	Global Shipping, Anti-Corruption	Examines how blockchain can be used to mitigate corruption in shipping supply chains.
96	Su, C., Qin, M., Tao, R., & Umar, M. (2020). Financial implications of the fourth industrial revolution: Can Bitcoin improve prospects of energy investment? *Technological Forecasting and Social Change, 158*, 00401625.	Bitcoin as an Alternative Investment	Empirical Analysis	Financial Markets, Bitcoin, Energy Investment	Investigates Bitcoin's role in improving energy investment prospects amid financial shifts.
97	Tapscott, D., & Tapscott, A. (2017). How blockchain will change organizations. *MIT Sloan Management Review, 58*(2), 15329194.	Blockchain & Organizational Structures	Conceptual Paper	Organizational Change, Blockchain	Discusses how blockchain decentralization impacts corporate governance and structures.
98	Treiblmaier, H. (2018). The impact of the blockchain on the supply chain: A theory-based research framework and a call for action. *Supply Chain Management, 23*(6), 13598546.	Blockchain Impact on SCM	Theory-Based Research Framework	Supply Chain Management	Proposes a theoretical framework for blockchain adoption in supply chain processes.
99	Wang, Y., Han, J., & Beynon-Davies, P. (2019). Understanding blockchain technology for future supply chains: A systematic literature review and research agenda. *Supply Chain Management, 24*(1), 13598546.	Blockchain Adoption in SCM	Systematic Literature Review	Future Supply Chains	Identifies research gaps and future trends for blockchain in supply chain management.

100	Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T., Shen, X. (2023). A survey on Metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys and Tutorials, 25*(1), 1553877X.	Privacy-Preserving Techniques, Blockchain in Metaverse	Survey-Based Study	Metaverse, Security & Privacy	Identifies privacy and security challenges in metaverse environments and how blockchain can address them.
101	Warner, K., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning, 52*(3), 18731872.	Dynamic Capabilities Theory	Conceptual Framework	Digital Transformation, Strategic Renewal	Digital transformation requires iterative capability-building and strategic adaptability.
102	Wu, X., Fan, Z., & Cao, B. (2023). An analysis of strategies for adopting blockchain technology in the fresh product supply chain. *International Journal of Production Research, 61*(11), 1366588X.	Supply Chain Management, Blockchain Adoption Strategies	Empirical Study	Fresh Product Supply Chain	Examines strategic blockchain adoption for traceability and efficiency in fresh product supply chains.
103	Xu, M., Ng, W., Lim, W., Kang, J., Xiong, Z., Niyato, D., Yang, Q., Shen, X., & Miao, C. (2023). A full dive into realizing the edge-enabled metaverse: Visions, enabling technologies, and challenges. *IEEE Communications Surveys and Tutorials, 25*(1), 1553877X.	Edge Computing for Metaverse, Blockchain	Review Study	Metaverse, Edge Computing	Discusses the role of edge computing in blockchain-powered metaverse environments.
104	Xu, X., Zhang, M., Dou, G., & Yu, Y. (2023). Coordinate a supply chain with an online platform considering green technology in the blockchain era. *International Journal of Production Research, 61*(11), 1366588X.	Game Theory, Blockchain & Green Supply Chains	Theoretical Model	Supply Chain, Green Technology	Explores how blockchain can enhance green technology adoption in supply chains.
105	Yin, H., Langenheldt, K., Harlev, M., Mukkamala, R., & Vatrapu, R. (2019). Regulating cryptocurrencies: A supervised machine learning approach to de-anonymizing the bitcoin blockchain. *Journal of Management Information Systems, 36*(1), 1557928X.	Supervised Learning for Blockchain Analytics	Machine Learning Approach	Cryptocurrency Regulation, Blockchain Privacy	Develops machine learning techniques to analyze and regulate Bitcoin transactions.
106	Zhang, K., Tian, J., Xiao, H., Zhao, Y., Zhao, W., & Chen, J. (2023). A numerical splitting and adaptive privacy budget-allocation-based LDP mechanism for privacy preservation in blockchain-powered IoT. *IEEE Internet of Things Journal, 10*(8), 23274662.	Local Differential Privacy (LDP), Blockchain Security	Algorithmic Study	Blockchain, IoT, Privacy	Proposes an LDP mechanism for enhancing privacy in blockchain-integrated IoT systems.
107	Zhang, W., Wei, C., Jiang, Q., Peng, C., & Zhao, J. (2021). Beyond the block: A novel blockchain-based technical model for long-term care insurance. *Journal of Management Information Systems, 38*(2), 1557928X.	Blockchain for Secure Insurance Models	Conceptual Model	Blockchain & Insurance	Proposes a blockchain-based solution for improving transparency and efficiency in long-term care insurance.