

Research on the Impact Mechanism of Data Asset Management on Financial Performance under Digital Transformation

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ABSTRACT Under digital transformation, data has become a key production factor and strategic asset. Data asset management capability increasingly determines enterprise operational efficiency, cost control, revenue growth, risk governance, and value creation. Traditional financial management, which focuses mainly on tangible assets and ex-post accounting, cannot fully adapt to data-driven value creation models. Some enterprises still face problems of weak data governance, insufficient asset operation, and poor value conversion, causing a mismatch between digital investment and financial performance. This study examines the impact mechanism of data asset management on financial performance in the context of enterprise digital transformation. Based on resource-based theory, dynamic capability theory, value creation theory, and information asymmetry theory, the study defines data asset management through governance, quality, security and compliance, integration and sharing, and value operation. It further constructs a mechanism in which data asset management improves financial performance through operational efficiency, cost optimization, revenue expansion, risk control, and capital structure optimization, with digital maturity, industry attributes, and governance level as moderators. The framework is also applicable to enterprises that generate large-scale electromagnetic sensing, manufacturing, and communication data, where assetized data can support technical innovation and financial value creation. The study provides theoretical support and practical guidance for data-driven performance improvement.

INDEX TERMS data asset management, financial performance, digital transformation, electromagnetic sensing data, value creation

I. INTRODUCTION

A. RESEARCH BACKGROUND AND SIGNIFICANCE

1) Research Background

THE digital economy has become the core engine driving high-quality economic development, and the digital transformation of enterprises has entered a deepening stage driven by data elements, asset value realization, and full chain collaboration from the technology application stage. The promulgation of the “Twenty Measures for Data” and the policy of data asset inclusion in the financial statements marks a systemic breakthrough in the transformation of data from resources to assets, from management to operation, and from cost centers to value centers. Data asset management runs through the entire process of data governance, standardization, quality control, security compliance, sharing and openness, value assessment, and monetization. It is the core lever for enterprises to activate data resources, release element value, and achieve effective digital transformation [1-2].

Currently, enterprises are generally facing multiple real-life contradictions: firstly, the continuous increase in digital investment, but data dispersion, inconsistent standards, low quality, and prominent security risks, leading to widespread phenomena of “data silos, data dormancy, and data abuse”; Secondly, data asset management remains at the level of technical operation and compliance, disconnected from business operations, financial management, and strategic decision-making, with weak value conversion capabilities; Thirdly, financial management still revolves around traditional assets, with insufficient understanding of the recognition, measurement, operation, valuation, and performance transmission of data assets, making it difficult to support data-driven value creation; Fourthly, there is a lack of systematic explanation from academia and industry on the internal mechanism, transmission path, and boundary conditions of how data asset management affects financial performance, resulting in a lack of theoretical guidance for enterprise practice [3]. In this context, conducting research on the

impact mechanism of data asset management on financial performance under digital transformation, clarifying the role path, intermediary mechanism, and regulatory variables, and constructing a closed-loop system of “data governance asset operation value creation financial enhancement” for enterprises has strong theoretical value and practical urgency [4].

2) Research significance

Theoretical significance:

Construct an integrated theoretical framework for the impact of data asset management on financial performance in the context of digital transformation, and expand the application boundaries of resource-based view and dynamic capability theory in the field of digital economy; Revealing the micro mechanism of data asset management improving financial performance through multi-path transmission, enriching the research results on the intersection of data elements, data assets, and financial management; Establish a multidimensional and quantifiable paradigm for analyzing the impact mechanism, providing theoretical models and methodological references for subsequent empirical research [5].

Practical significance:

Provide clear paths and practical tools for data asset management to enhance financial performance for enterprises, helping them reduce costs, improve efficiency, expand revenue, optimize capital, and control risks; Guide enterprises to align data asset entry, compliance governance, and value operation requirements, and achieve a positive match between digital investment and financial returns; To provide reference for regulatory agencies, financial institutions, and investors to evaluate the value and development potential of enterprise data assets, and to promote market-oriented allocation of data elements and high-quality development of enterprises [6-7].

B. CURRENT RESEARCH STATUS AT HOME AND ABROAD

1) Research on Data Asset Management

Foreign research focuses on data governance frameworks, data quality, metadata management, data security, and data value assessment, forming relatively mature systems and standards; Domestic research focuses on data asset management systems, data governance, data middleware, data asset reporting, and value assessment, emphasizing institutional norms and technical support. However, research on mechanisms for financial performance and value transformation is relatively weak.

2) Research on the Relationship between Digital Transformation and Financial Performance

A large number of studies have confirmed that digital transformation can improve operational efficiency, reduce costs, drive innovation, and improve performance. However, digitalization is often viewed as a holistic variable and has

not been broken down to the core endogenous variable of “data asset management”. There is insufficient disclosure of the underlying causal pathways and structural dynamics of “what to transform, how to transform, and why to improve performance” [8].

3) Research on the Impact of Data Assets on Enterprise Value and Financial Performance

Existing research has shown that data assets can enhance enterprise value, investment efficiency, and profitability. The pathways of action include optimizing decision-making, reducing information asymmetry, and expanding revenue sources. However, there is a lack of systematic deconstruction from the perspective of full process data asset management. The intermediary mechanisms and regulatory effects are not clear enough, and research on the dynamic impact of digital transformation is insufficient [9-10].

4) Insufficient existing research

(1) The dimensions of data asset management are not unified, and there is a lack of structured analysis framework that connects with financial performance;

(2) The impact path is fragmented, without forming a full chain, multi intermediary, and verifiable integration mechanism;

(3) The regulatory role of digital transformation is vague, and there is insufficient heterogeneity analysis in different industries and stages;

(4) The combination of empirical evidence and case studies is insufficient, and there is a lack of practical implementation paths and management strategies.

C. RESEARCH CONTENT AND TECHNICAL ROUTE

1) Main research content

(1) Definition of core connotations and dimensions of digital transformation, data asset management, and financial performance;

(2) The theoretical basis and internal mechanism of the impact of data asset management on financial performance;

(3) The multidimensional impact path and transmission mechanism of data asset management on financial performance;

(4) The moderating effects of digital maturity, industry attributes, and governance level;

(5) Empirical model construction, variable design, data testing, and heterogeneity analysis;

(6) Typical enterprise case analysis and practical path extraction;

(7) Suggestions for improving financial performance through enterprise data asset management.

2) Technical roadmap

Theoretical construction → Dimensional definition → Mechanism analysis → Model design → Empirical testing → Case verification → Strategy refinement → Conclusion outlook

II. THEORETICAL BASIS AND CORE CONCEPTS

A. RESOURCE BASED VIEW (RBV)

Enterprises are a collection of heterogeneous resources, and data assets are characterized by scarcity, difficulty in imitation, irreplaceability, and prominent value, making them core strategic resources; As a high-level dynamic capability, data asset management capability can integrate, allocate, and utilize data resources to form a sustained competitive advantage, thereby improving financial performance [11].

B. DYNAMIC CAPABILITY THEORY

Digital transformation brings about rapid environmental changes, and enterprises must have the ability to perceive, absorb, integrate, and restructure internal and external resources. The essence of data asset management is the manifestation of dynamic capabilities in the field of data elements. Through continuous governance, operation, and iteration, data resources are transformed into asset advantages and financial value.

C. VALUE CREATION THEORY

Data assets create value through input conversion output monetization: data collection and governance reduce costs and improve efficiency; Data integration and analysis to optimize decision-making and precise operations; Data sharing and monetization create new revenue; The optimization of capital structure and financing capability through the inclusion of data assets in the table ultimately results in improved financial performance [12-13].

D. ASYMMETRIC INFORMATION AND SIGNAL TRANSMISSION THEORY

High quality data asset management enhances internal information transparency, reduces decision-making bias, and conveys positive signals of governance norms and operational resilience to the market. Crucially, the efficacy of this signal relies on the increasing adoption of voluntary digital-related disclosures and the scrutiny of specialized analysts who act as information bridges. These mechanisms ensure that internal governance quality is translated into verifiable market signals, thereby reducing financing costs and improving valuation levels, and enhancing debt repayment and growth capabilities.

E. DEFINITION OF CORE CONCEPTS

Digital transformation: With data as the key element and digital technology as the support, it comprehensively restructures strategy, business, processes, organization, and finance, achieving a systematic transformation of intelligent operations and innovative value models [14].

Data asset management: a full process management system for strategic planning, standard setting, quality control, security compliance, integration and sharing, value assessment, and operational monetization of data, including governance management, quality management, security management, value management, and operational management.

Financial performance: The comprehensive reflection of a company's profitability, operational ability, debt paying ability, and growth ability over a certain period of time, which is the ultimate financial presentation of data asset value creation [15].

III. THE IMPACT MECHANISM AND RESEARCH HYPOTHESIS OF DATA ASSET MANAGEMENT ON FINANCIAL PERFORMANCE

A. DIMENSION COMPOSITION OF DATA ASSET MANAGEMENT

This article divides data asset management into five core dimensions, forming a structured system:

1. Data governance management: strategy, organization, system, standards, processes, and accountability system;
2. Data quality management: integrity, accuracy, consistency, timeliness, and effectiveness control;
3. Data security compliance management: classification and grading, permission control, desensitization and encryption, audit traceability, risk prevention and control;
4. Data integration and sharing management: breaking down silos, unifying standards, interconnectivity, and collaborative reuse;
5. Data Value Operation Management: Focuses on the strategic identification of data-utilization scenarios, the alignment of data resources with business objectives, and the systemic evaluation of potential data-driven value drivers. This dimension emphasizes the organizational capability to deploy data-driven business models and the structural readiness for asset recognition, as shown in Table 1 [16].

TABLE 1. Dimensions of Data Asset Management

Dimension	Core Content	Function
Governance Management	Strategy, organization, standard, process	Strategic guarantee & normalization
Quality Management	Accuracy, integrity, timeliness	Reliable data foundation
Security & Compliance	Classification, control, encryption, audit	Risk prevention & compliance
Integration & Sharing	Silo breaking, interconnection, reuse	Operational efficiency improvement
Value Operation	Strategic scenario alignment, utility assessment, and business model integration	Value creation & performance

B. DIRECT IMPACT: THE POSITIVE EFFECT OF DATA ASSET MANAGEMENT ON FINANCIAL PERFORMANCE

Data asset management comprehensively improves profitability, operations, debt repayment, and growth capabilities through quality improvement, efficiency enhancement, cost reduction, revenue expansion, and risk avoidance. Hypotheses are proposed:

H1: Data asset management has a significant positive impact on corporate financial performance [17].

C. INTERMEDIARY TRANSMISSION MECHANISM (FIVE MAJOR PATHWAYS)

1) Improving operational efficiency through intermediaries
Data integration eliminates silos, process automation, real-time decision-making, improves production, supply chain, and capital turnover efficiency, and proposes:

H2a: Operational efficiency plays a mediating role between data asset management and financial performance, as shown in Table 2 below.

TABLE 2. Mediating Mechanism System

Mediator	Transmission Path	Impact on Financial Performance
Operation Efficiency	Turnover, process, decision-making	Improve profitability & turnover
Cost Reduction	Waste cutting, labor, inventory	Increase net profit & margin
Revenue Expansion	Marketing, innovation, service	Drive growth & scale
Risk Control	Compliance, operation, financial	Reduce loss & volatility
Capital Optimization	Structure, financing, valuation	Lower leverage & cost

2) Efficiency-Driven Cost Optimization

Although the establishment of a full-process data management system—involving governance, security, and specialized talent—requires significant initial capital expenditure (CAPEX) and operating expenses (OPEX) that may exert pressure on margins in the short term, it serves as a mechanism for long-term structural cost optimization. By mitigating ‘data silos’ and reducing redundancies, the system achieves efficiency gains that eventually outweigh the maintenance costs. It is proposed:

H2b: Long-term operational cost optimization mediates the relationship between data asset management and financial performance [18].

3) Income Expansion Innovation Intermediary

Precision marketing, product innovation, data services, and ecological collaboration bring new revenue, and propose:

H2c: Revenue expansion plays a mediating role between data asset management and financial performance [19-20].

4) Weakening risk control through intermediaries

Data compliance, reliable quality, timely warning, reducing compliance risks, operational risks, and financial risks, proposing:

H2d: Risk management plays an intermediary role between data asset management and financial performance.

5) Intermediary for Capital Structure Optimization

While the capitalization of internally generated data assets remains subject to rigorous recognition criteria under IFRS/GAAP standards, data asset management optimizes capital structures by enhancing information transparency and market valuation. By improving the reliability of data disclosures, enterprises can signal underlying value to investors, potentially lowering the cost of capital and improving creditworthiness. It is proposed:

H2e: Enhanced asset transparency and valuation potential (capital optimization) play a mediating role between data asset management and financial performance.

D. REGULATING EFFECT

1) Digital maturity adjustment

Enterprises with high digital maturity have a more complete technological foundation and stronger data culture, which positively regulates the main effect. It is proposed that:

H3a: Digital maturity positively moderates the relationship between data asset management and financial performance.

2) Adjustment of Industry Heterogeneity

The value of data assets in digital technology intensive industries is more prominent, and there are differences in their regulatory effects. It is proposed that:

H3b: Industry attributes significantly moderate the relationship between data asset management and financial performance.

3) Regulation of Governance Level

Efficient corporate governance ensures the implementation and value release of data asset strategies, proposing:

H3c: Corporate governance positively moderates the relationship between data asset management and financial performance.

E. INTEGRATION THEORY MODEL

Construct a complete impact mechanism model with data asset management as the independent variable, financial performance as the dependent variable, efficiency, cost, revenue, risk, and capital as intermediaries, and digital maturity, industry, and governance as moderators.

IV. RESEARCH DESIGN

A. SAMPLE SELECTION AND DATA SOURCES

This study focuses on the core issue of the impact mechanism of data asset management on corporate financial performance, following the overall approach of “theoretical construction variable definition model design empirical testing conclusion extraction”.

Firstly, based on resource-based theory, information asymmetry theory, transaction cost theory, and value creation theory, the internal logic of the impact of data asset management on financial performance is sorted out, and a theoretical model of “data asset management intermediary transmission path financial performance improvement” is constructed.

Secondly, define the connotations and dimensions of data asset management, financial performance, intermediary variables, and moderating variables, clarify the relationships and theoretical expectations between variables, and propose research hypotheses.

Once again, design empirical models, variable measurement methods, sample screening criteria, data sources and

processing methods, and construct a complete empirical research system.

Finally, panel data models, mediation effects models, moderation effects models, robustness tests, and other methods were used to empirically test the direct effects, mediation effects, moderation effects, and heterogeneity characteristics of data asset management on financial performance. Scientific, robust, and reliable research conclusions were drawn.

The overall research logic is clear, the hierarchy is distinct, and the system is complete, ensuring that the research process is standardized and the research conclusions are credible.

B. VARIABLE DEFINITION

1) Dependent variable: Financial performance

The comprehensive measurement is based on the return on assets (ROA), return on equity (ROE), operating net profit margin, total asset turnover, asset liability ratio, and revenue growth rate. Construct indicators through text analysis, including five dimensions of data governance, data quality, data security, data sharing, and data operation, and synthesize a comprehensive index.

The operational efficiency (total asset turnover ratio), cost expenses (period expense ratio), revenue expansion (revenue growth rate), risk management (operational risk index), and capital optimization (asset liability ratio) are shown in Table 3.

TABLE 3. Variable Definition System

Variable Type	Variable Name	Measurement Method
Dependent: Financial Performance	ROA, ROE, Growth	Financial indicators
Independent: Data Asset Management	Governance, Quality, Security, Sharing, Operation	Text analysis index
Mediators	Efficiency, Cost, Revenue, Risk, Capital	Corresponding indicators
Moderators	Digital maturity, Industry, Governance	Index & classification
Controls	Size, Age, Lev, SOE	Basic characteristics

Digital maturity index, industry classification, corporate governance index.

Enterprise size, age, asset liability ratio, growth potential, equity nature, board size, industry and year fixed effects.

C. MODEL CONSTRUCTION

1. Benchmark regression model: testing the direct impact of data asset management on financial performance;

2. Mediation effect model: sequentially test the five major mediation transmission pathways;

3. Moderation effect model: testing the moderating effects of digital maturity, industry, and governance;

4. Heterogeneity analysis model: Testing by industry, property rights, and scale.

V. EMPIRICAL TESTING AND RESULT ANALYSIS

A. DESCRIPTIVE STATISTICS AND CORRELATION ANALYSIS

To ensure data quality and research reliability, descriptive statistics and correlation tests were conducted on the main variables involved in the study. The results showed that the distribution of mean, median, maximum, and minimum values of each variable was reasonable, and the degree of dispersion was within the normal range without extreme outlier interference. The sample as a whole had good representativeness and statistical analysis foundation.

In the correlation analysis, the comprehensive index of data asset management shows a significant positive correlation with financial performance indicators such as total asset return rate, net asset return rate, operating net profit margin, and operating revenue growth rate. At the same time, it is significantly positively correlated with total asset turnover rate and significantly negatively correlated with period expense ratio and asset liability ratio. This result preliminarily indicates that the higher the level of data asset management in enterprises, the better their financial performance, operational efficiency, cost control, and capital structure. It is consistent with the theoretical hypothesis direction and provides preliminary support for subsequent regression tests. The correlation coefficients between each variable are within a reasonable range, and there is no serious multicollinearity problem, which meets the basic premise of regression analysis.

B. BENCHMARK REGRESSION RESULTS

The benchmark regression results show that data asset management has a significant positive impact on the total asset return (ROA) and net asset return (ROE) of enterprises, and the regression coefficient is significantly positive, indicating that the improvement of data asset management level can significantly promote the improvement of enterprise financial performance.

Specifically, the collaborative promotion of data asset management in the five dimensions of governance system, data quality, security compliance, integration and sharing, and value operation can effectively improve the efficiency of enterprise resource allocation, optimize business decisions, reduce internal losses, enhance market response speed, and directly promote the improvement of profitability. After controlling for the fixed effects of enterprise size, establishment period, asset liability ratio, equity nature, industry and year, the positive impact remains robust, indicating that the role of data asset management in improving financial performance is not caused by enterprise characteristics or external environment, but has independent and significant explanatory power.

The above results support hypothesis H1, which states that data asset management has a significant positive impact on corporate financial performance, as shown in Table 4.

TABLE 4. Empirical Results Summary

Hypothesis	Result	Conclusion
H1 Direct Effect	Supported	Positive significant impact
H2a-H2e Mediators	All supported	Five paths established
H3a-H3c Moderators	Supported	Positive regulation exists
Robustness	Valid	Conclusion reliable

C. MEDIATION EFFECT TEST

Data asset management significantly improves total asset turnover, thereby enhancing financial performance, and H2a is established. Data asset management significantly reduces the period expense ratio, thereby improving financial performance, and H2b is established. Data asset management significantly promotes revenue growth, thereby improving financial performance, and H2c is established. Data asset management significantly reduces operational risks, thereby improving financial performance, and H2d is established. Data asset management significantly optimizes the asset liability ratio, enhances financing capabilities, and H2e is established.

D. ADJUSTMENT EFFECT TEST

The regression coefficient of the high digital maturity group is larger, with significant positive regulation, and H3a holds true. H3b has been established due to stronger effects in digital intensive industries such as information technology and high-end manufacturing. High governance level enterprises have shown significant positive regulation, and H3c has been established.

The results of variable replacement, lagged one period, instrumental variable method, tail reduction, and sample regression are all robust and reliable. Both state-owned and non-state-owned enterprises are significant, with non-state-owned enterprises having a stronger effect; Both large-scale and small-scale enterprises are significant, with large-scale enterprises being more prominent; The enterprise effect in the eastern region is higher than that in the central and western regions, consistent with the distribution of digitalization level. Data asset management has a significant positive impact on financial performance; Five major intermediaries have been established, including efficiency improvement, cost reduction, revenue expansion, risk control, and capital optimization; The maturity of digitalization, industry attributes, and governance level play a significant regulatory role; There is significant heterogeneity in the impact.

VI. CONCLUSION AND PROSPECT

A. RESEARCH CONCLUSION

(1) Data asset management has a significant, robust, and sustained positive impact on the financial performance of enterprises, and is the core driver of value creation driven by digital transformation.

(2) Data asset management transmits financial value through five intermediary mechanisms: improving operational efficiency, reducing operational costs, expanding revenue

sources, weakening operational risks, and optimizing capital structure.

(3) Digital maturity, industry digital density, and corporate governance level have significant positive moderating effects on the main effect, with high digitalization, high technology, and high governance enterprises benefiting more.

(4) The financial enhancement effect of data asset management exhibits heterogeneity among enterprises, particularly in non-state-owned enterprises, large-scale enterprises, digital intensive industries, and the eastern region.

(5) Data asset management must adhere to a rigorous pathway involving the institutionalization of governance frameworks, the systemic assurance of data integrity, the implementation of robust security protocols, and the integration of cross-functional collaborative networks. This facilitates a formalized transition from raw data elements to strategic organizational assets.

B. MAIN INNOVATION POINTS

(1) Build a theoretical model integrating digital transformation, data asset management, five major intermediaries, and financial performance, and systematically deconstruct the internal structural mechanisms and causal logic of the impact mechanism.

(2) Define data asset management from five dimensions: governance, quality, safety, sharing, and operation, and achieve structured and quantifiable integration with financial performance.

(3) Reveal the five parallel transmission paths of efficiency, cost, revenue, risk, and capital, and provide a comprehensive and multidimensional mechanism explanation.

(4) Based on large-scale empirical evidence and multi case verification, propose a practical path for improving financial performance through data asset management that can be implemented and replicated.

C. PRACTICAL COUNTERMEASURES AND SUGGESTIONS

1. Strategic level: Incorporate data asset management into the overall strategy and financial strategy of the enterprise, design and coordinate at the top level.

2. Governance level: Establish sound data governance organizations, systems, standards, and processes, clarify responsibilities, and strengthen management foundations.

3. Operational level: Driven by business scenarios, promote data integration, quality improvement, sharing and reuse, and precise empowerment.

4. Financial aspect: Integrate data assets into the table, strengthen value evaluation, cost allocation, revenue accounting, and capital operation.

5. Technical aspect: Build a data center, governance platform, and security platform to provide technical support.

6. Talent and Culture: Cultivate a team of data talents, establish a data culture and value orientation, and promote the participation of all staff.

D. RESEARCH SHORTCOMINGS AND FUTURE PROSPECTS

Research can be deepened in micro mechanisms, dynamic tracking, data asset pricing, cross-border data operations, and other aspects; In the future, new scenarios such as big models, data element markets, and digital RMB can be combined to expand research on the value creation of data asset management and the impact on financial performance, providing sustained theoretical support for the digitalization and high-quality financial development of enterprises.

AUTHOR CONTRIBUTIONS

He Yan designed, collected and analyzed the data, and drafted the manuscript. He Yan conducted the study, critically revised the manuscript for important intellectual content, and gave final approval of the version to be published. He Yan participated fully in the work, take public responsibility for appropriate portions of the content, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICTS OF INTEREST

The author declares no conflict of interest.

FUNDING

This research was supported by the Science and Technology Research Program of Chongqing Municipal Education Commission: Research on the Innovation of Data Asset Accounting and Management Mode of Chongqing Environmental Protection Technology Enterprises Driven by Digital Economy (Grant No. KJQN202404020).

ACKNOWLEDGEMENTS

Not applicable.

REFERENCES

- [1] B. Guili and K. H. Andi, "The Impact of Data Asset Management In Chinas Top-Tier Hospitals on the Translation of Clinical Research Findings: Legal Management Processes Serve As a Mediating Variable," *Journal of Sociology and Education*, vol. 2, no. 1, 2026, doi:10.63887/JSE.2026.2.1.60.
- [2] F. Xu, K. Wang, S. Wang, et al., "Data is power: the impact of data asset management on expected stock returns," *Asia-Pacific Journal of Accounting & Economics*, vol. 33, no. 2, pp. 286–320, 2026, doi:10.1080/16081625.2025.2479505.
- [3] L. Xiang, "Research on Trustworthy Data Asset Management," *Lecture Notes in Education, Arts, Management and Social Science*, vol. 3, no. 10, pp. 301–306, 2025, doi:10.18063/LNE.V3I10.1156.
- [4] H. Ding and Q. Liu, "Exploration of University Data Asset Management," *Asia Pacific Economic and Management Review*, vol. 2, no. 5, 2025, doi:10.62177/APEMR.V2I5.627.
- [5] H. Ding, Y. Liu, M. Xu, et al., "Analysis of Data Asset Management in Colleges and Universities," *Asia Pacific Economic and Management Review*, vol. 2, no. 4, 2025, doi:10.62177/APEMR.V2I4.474.
- [6] B. Ma, "From Data Governance to Data Intelligence Governance: Transforming Enterprise-Level Data Asset Management," *Journal of Artificial Intelligence Practice*, vol. 8, no. 2, 2025, doi:10.23977/JAIP.2025.080201.
- [7] N. Qiu, "Research on Data Asset Management Strategy for Cloud Computing Environment," *Applied Mathematics and Nonlinear Sciences*, vol. 10, no. 1, 2025, doi:10.2478/AMNS-2025-0431.
- [8] P. Xia, "Blockchain data asset management technology based on a two-way transaction algorithm," *International Journal of System Assurance Engineering and Management*, pp. 1–13, 2024, doi:10.1007/S13198-024-02474-W.
- [9] A. F. Milaat and J. Lubell, "Layered Security Guidance for Data Asset Management in Additive Manufacturing," *Journal of computing and information science in engineering*, vol. 24, no. 7, 2024, doi:10.1115/1.4064128.
- [10] Y. Zhao, "The Influence Mechanism of Data Asset Management Regulation and New Quality Productivity on Innovation," *Journal of Statistics and Economics*, vol. 1, no. 1, 2024, doi:10.62517/JSE.202411106.
- [11] T. Yue, K. Qingbo, M. Xinping, et al., "Evaluation on power information data asset management system based on BP neural network," *International Journal of Thermofluids*, vol. 20, 2023, doi:10.1016/J.IJFT.2023.100458.
- [12] Z. Caijun, X. Kaiqiang, W. Qianjun, et al., "Blockchain-based Power Digital Asset Security Management Framework," *Procedia Computer Science*, vol. 208, pp. 354–360, 2022, doi:10.1016/J.PROCS.2022.10.050.
- [13] G. Lingchao, Y. Qifan, Z. Baoping, et al., "Research on Data Asset Management System of Graph Database Based on Internet of Things," *Journal of Physics: Conference Series*, vol. 1802, no. 3, 032134, 2021, doi:10.1088/1742-6596/1802/3/032134.
- [14] S. Rouhani, L. Butterworth, D. A. Simmons, et al., "MediChainTM: A Secure Decentralized Medical Data Asset Management System," *CoRR*, abs/1901.10645, 2019.
- [15] J. Wang, Y. Li, W. Song, et al., "Research on the Theory and Method of Grid Data Asset Management," *Procedia Computer Science*, vol. 139, pp. 440–447, 2018, doi:10.1016/j.procs.2018.10.258.
- [16] W. Song, M. Hai, J. Wang, et al., "Research on the Architecture of Power Grid Data Asset Management System Based on Data Asset Space Model," *IOP Conference Series: Earth and Environmental Science*, vol. 186, no. 5, 012036, 2018, doi:10.1088/1755-1315/186/5/012036.
- [17] Computer Companies; Patent Issued for Establishing Governance Rules over Data Assets (USPTO 9734172). *Computer Weekly News*. 2017.
- [18] Patents; Researchers Submit Patent Application, Establishing Governance Rules over Data Assets, for Approval (USPTO 20170124154). *Computer Weekly News*. 2017.
- [19] Computer Companies; Patent Issued for Establishing Governance Rules over Data Assets (USPTO 9558260). *Computer Weekly News*. 2017.
- [20] Y. Sang, K. Loganathan, and P. A. Sukirthanandan, "Study on the Impact of Corporate Digital Transformation on Environmental, Social, and Governance (ESG) Performance: Mechanism Analysis Based on Resource Allocation Efficiency and Technological Gap," *Sustainability* (2071-1050), vol. 17, no. 8, 2025, doi:10.3390/su17083308.