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Measurement and Reporting of Intellectual Capital

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Abstract

This paper addresses the theoretical and methodological gaps in existing intellectual capital (IC) research by proposing an Intellectual Capital Integrated Measurement Model (ICIM) and a matching reporting strategy. It first reviews two dominant IC paradigms: the constitutive and the "premium perspective". Unlike existing frameworks prioritizing internal measurement or external disclosure, ICIM integrates internal quality indicators and external market valuations, achieving dynamic, transparent value assessment. The model clarifies IC's role as a "measurement tool + conceptual synthesis + reporting bridge", while the reporting strategy aligns with ESG and global standards. Contributions include filling the "internal-external integration" theoretical gap, enhancing methodological feasibility, and providing actionable guidance for IC disclosure.

1. Introduction

The accelerating shift towards a knowledge-based economy has redefined corporate value creation paradigms. Traditional financial capital constraints have diminished in significance, particularly in high-tech sectors characterized by rapid product iteration. Strategic management now prioritizes intangible resources, employee creativity, organizational processes, and customer ecosystems, that collectively constitute intellectual capital (IC). While prior research has bifurcated IC into constitutive (human/structural/relational capital) and premium paradigms, this study bridges the ontological divide through an integrated measurement framework. Our contribution lies in developing a dialectical synthesis of internal quality metrics and external market valuations, addressing the methodological lacuna identified in prior work (Stahle et al., 2011; Azamat et al., 2023). Broadly defined, intellectual capital encompasses all non-physical resources that can confer competitive advantages and value benefits on firms.

Currently, definitions of intellectual capital are primarily divided into two categories: the "constitutive view" and the "premium view." The constitutive paradigm posits intellectual capital as a synergistic amalgamation of intangible assets, operationalized through a tripartite framework comprising human, structural, and relational capital. Contrastingly, the premium paradigm conceptualizes intellectual capital as the incremental market valuation attributable to unmeasured intangible assets. While the former elucidates micro-level compositional dynamics, the latter captures macro-level market perceptions. However, extant frameworks exhibit a bifurcated paradigmatic divide, precluding holistic value assessment. This view highlights the external manifestation of intellectual capital, treating it as an integrated "black box" whose value is realized through market performance. These two definitional paradigms have led to the development of distinct measurement approaches: an indicator-based approach rooted in the constitutive view, and a market value-based approach derived from the premium view. The indicator-based approach, exemplified by methods such as the Skandia Navigator, the Balanced Scorecard (BSC), and the VAIC™ model, focuses on designing multidimensional indicators or monetary estimates to evaluate the components of intellectual capital. It excels in revealing internal value-creation mechanisms but often falls short in providing aggregated monetary valuations. On the other hand, the market value-based approach, including methods such as the Market-to-Book Value difference and Tobin's Q, captures the overall value of intellectual capital reflected by market perceptions. While conducive to cross-company comparison, this method fails to uncover intellectual capital's internal structure and drivers and is susceptible to market noise and fluctuations. Existing research remains confined mainly to one of these two perspectives, with limited attempts to integrate them systematically into a comprehensive measurement and reporting framework that captures intellectual capital's composition and value performance.

This study advances the theoretical discourse on intellectual capital by constructing a unified measurement paradigm that transcends the ontological divide between the constitutive and premium paradigms. By integrating resource-based view (Barney, 1991) and market valuation theory (Ohlson, 1995), ICIM resolves the epistemological impasse in extant literature—whereby structural decomposition (constitutive view) and market signaling (premium view) operate as disjointed analytical silos. This integrative framework represents a paradigmatic shift from dualistic measurement to dialectical synthesis, enabling simultaneous assessment of IC's internal mechanics and external valuation.

2. The Connotation and Classification of Intellectual Capital

Knowledge is the fundamental source of value creation in firms, and accumulating all corporate knowledge gives rise to intellectual capital. Although intellectual capital cannot be materialized directly, it significantly enhances the value-creating capacity of a firm's physical capital. Its value is manifested in the degree to which these intangible assets are transformed into economic benefits. In financial accounting, capital typically refers to the fund's shareholders invest, representing owners' equity. On the other hand, intellectual capital can be understood as a broader non-monetary capital investment, encompassing contributions from diverse stakeholders such as customers, employees, and business partners. From an internal perspective, the "constitutive view" perceives intellectual capital as the sum and collection of various intangible assets owned by a firm that can create value. From an external perspective, the "premium view" defines intellectual capital as the excess of a firm's market value over its book value.

2.1 The “Constitutive View” Perspective: Intellectual Capital as a Collection of Intangible Assets

The “constitutive view” serves as a foundational perspective for understanding intellectual capital, conceptualizing it as an organic combination of various intangible assets within an enterprise. These assets collectively contribute to the company's value creation and competitive advantage. This perspective emphasizes the internal structure of intellectual capital, typically dissecting it into core components such as human capital, structural capital, and relational capital (Alwis et al., 2018; Abdallah et al., 2024; Farzaneh et al., 2022; He et al., 2024).

Human capital refers to the total knowledge, skills, competencies, experience, innovative potential, and motivation individuals possess within an organization. It encapsulates the employees' intellect, creativity, and problem-solving abilities, serving as a core driver of value creation for the enterprise. In the knowledge-based economy, highly skilled and knowledgeable employees drive corporate innovation and improve efficiency. For instance, in green technology innovation, green human capital is considered a significant driver for both green product and process innovation (Khan et al., 2024).

Structural capital encompasses the non-human assets within an organization that support knowledge creation, storage, dissemination, and application. This includes organizational culture, management systems, rules and regulations, processes, databases, intellectual property (such as patents, copyrights, trademarks), and information technology infrastructure. It ensures that the organization can continue to operate and create value even after employees depart. Structural capital is fundamental to internal efficiency and innovation within an enterprise, and its efficiency significantly impacts the company's financial performance (Asiaei & Jusoh, 2017). Research indicates that structural capital is closely related to knowledge sharing and acquisition, improving organizational efficiency and collaboration (Chatterjee et al., 2023).

Relational capital represents the value derived from the relationships and networks an enterprise establishes and maintains with external stakeholders, such as customers, suppliers, partners, government, communities, and competitors (Abdallah et al., 2024). This category includes brand reputation, customer loyalty, supplier networks, strategic alliances, and external collaborations. Relational capital is crucial for acquiring external resources and market information, fostering innovation, and increasing market value. Substantial relational capital can enhance a company's market adaptability and competitiveness, and positively influence its long-term innovative development.

2.2 The “Premium View” Perspective: Intellectual Capital as the Difference between Market Value and Book Value

The “premium view” defines intellectual capital as the excess of a firm's market value over its book value. This perspective, which views IC as a “black box” due to its intangible and often uncapitalized nature in traditional financial reports, emphasizes its role as a source of future excess returns. It is particularly relevant for valuing high-growth firms like technology and platform companies. The significant and growing gap between market and book values in modern economies underscores the importance of intellectual capital, as traditional accounting methods often fail to capture its full worth (Swartz et al., 2006).

This financial perspective on intellectual capital has deep roots in economic theory. John Kenneth Galbraith's 1969 insights on the valuation of knowledge as an intangible asset paved the way for understanding this market-to-book value discrepancy. Leif Edvinsson, a pioneer in intellectual capital measurement, further articulated this concept, describing intellectual capital as the “hidden value” or the difference between market value and book value representing the firm's true worth. This approach to valuing intellectual capital is fundamental, as it recognizes that a company's market value often significantly exceeds its tangible assets, with the difference attributed to its intangible assets, including intellectual capital (Azamat et al., 2023).

The “black box” perspective is particularly relevant for high-growth firms, such as technology companies and platform businesses, because their valuation heavily depends on future profitability expectations driven by their intellectual assets rather than their current tangible assets (Motohashi & Zhu, 2023). These firms often possess substantial intellectual capital in the form of proprietary technology, brand reputation, innovation capabilities, and skilled personnel, which are difficult to quantify using traditional accounting methods (Abdelfattah et al., 2024; Chen et al., 2024). The market's comprehensive expectations of a firm's future profitability, heavily influenced by its intellectual capital, are externalized through capital market negotiations, leading to high market valuations that far exceed their book values (Salgado-Criado et al., 2024). Digital transformation's impact further moderates’ intellectual capital's effect on firm performance, enhancing its value-creation potential (Vo & Tran, 2024).

Table 1 Comparison of Two Perspectives on Intellectual Capital Definition

Characteristic Dimension	Component Perspective	Premium Perspective
Theoretical Basis	Knowledge Management Theory, Resource-Based View	Financial Economics, Valuation Theory
Core Viewpoint	Intellectual capital is an aggregation of intangible assets	Intellectual capital is the difference between market value and book value
Focus	Internal structure and value drivers	Overall value and market expectations
Value Manifestation	Potential competitive advantages and value creation capabilities	Value premium reflected through market transactions

2.3 Theoretical Locus of ICIM

Existing IC frameworks oscillate between two epistemic poles: the constitutive and premium paradigms. The former VRIN resource logic assumes IC’s value resides in its idiosyncratic configuration; the latter resonates with residual income valuation, treating IC as a residual market signal. However, this disciplinary bifurcation creates a methodological lacuna: constitutive models lack market calibration, while premium models’ obscure internal mechanisms. ICIM bridges this gap through a theoretically recursive design: its measurement module feeds into the valuation

module, creating a feedback loop that ensures ontological consistency and epistemological completeness.

3. Measurement Methods of Intellectual Capital from the "Constitutive View" Perspective

Measurement methods based on the "constitutive view" aim to reveal the value contribution of each component of intellectual capital. These methods can be categorized into the following types:

3.1 Direct Measurement Method

The direct measurement method attempts to design specific quantitative indicators for each component of intellectual capital. The most notable practice is the Skandia Navigator model developed by the Swedish company Skandia. Starting from five focal points—financial, customer, process, renewal, development, and human resources—this model has been designed with up to 164 measurement indicators, forming a comprehensive monitoring system for intangible assets (Edvinsson, 1997). The advantage of this method is its comprehensiveness, which provides detailed guidance for management; however, its drawbacks include a complex and time-consuming process and subjectivity in determining indicator weights.

3.2 Scorecard Method

The scorecard method assesses the status of intellectual capital by constructing a comprehensive scoring system. The Balanced Scorecard (BSC) is a typical example, which translates organizational strategy into goals and indicators across four dimensions: financial, customer, internal processes, and learning and growth. This method links intellectual capital (especially the learning and growth dimension) with financial performance, establishing a framework for evaluating a company's intellectual capital (Pérez et al., 2017). Its strength lies in combining intellectual capital management with strategic implementation, but it also shares the disadvantage of intense subjectivity and difficulty in making cross-company comparisons.

3.3 Monetary Measurement Method

The monetary measurement method seeks to monetize the value of intellectual capital. Within this method, human resource accounting attempts to measure the value of a company's human resources using accounting methods. The Value-Added Intellectual Coefficient (VAIC™) method assesses the efficiency of intellectual capital by calculating the ratio of a company's value added (VA) to its investments in human and structural capital. The formula is:

$$VAIC=HCE+SCE \quad (1)$$

HCE denotes Human Capital Efficiency and SCE denotes Structural Capital Efficiency (Ståhle et al., 2011; Bayraktaroglu et al., 2019). Although this method has been applied in some studies, it has sparked controversy in academia due to simplifications such as equating employee salaries with human capital investment.

Table 2 Comparison of Main Measurement Methods Based on the "Component Perspective"

Method Type	Representative Method/Model	Main Features	Advantages	Disadvantages
Direct Measurement Method	Skandia Navigator Model	Multi-dimensional indicator monitoring (e.g., 112 indicators)	Comprehensive and detailed, beneficial for internal management	Complex and time-consuming, highly subjective
Scorecard Method	Balanced Scorecard (BSC)	Translates strategic objectives into four perspectives of indicators	Strategy-oriented, highly comprehensive	Subjective weighting, difficult to compare across organizations
Monetary Measurement Method	VAIC™ Method	Calculates intellectual capital efficiency coefficients	Provides a single comparable numerical value	Oversimplified, controversial

4. Measurement Methods of Intellectual Capital from the “Premium View” Perspective

Measurement methods based on the “premium view” primarily aim to estimate the value of intellectual capital. These methods include:

4.1 Market-Based Measurement Method

Market-based measurement methods leverage capital market information to derive the value of intellectual capital. A widely adopted technique is the Market-to-Book Value Difference method, which computes the difference between a company’s market value and the book value of its net assets (Kim & Taylor, 2014). Another standard metric is Tobin’s Q, defined as the ratio of a company’s market value to the replacement cost of its assets (Bhakar et al., 2024). A Tobin’s Q greater than one typically suggests that the firm possesses valuable intangible assets.

The advantages of these methods include straightforward calculation and ease of data acquisition. However, they also face several limitations. Market-based measures are highly susceptible to market noise, as stock prices are influenced by macroeconomic conditions, investor sentiment, and sector-specific cycles—factors unrelated to intellectual capital—which can lead to significant volatility and distortion in valuation. Moreover, these methods treat intellectual capital as a monolithic black box (Rodov & Leliaert, 2002), failing to disaggregate the value contributions of its constituent elements, thereby limiting their usefulness for internal management and strategic decision-making. Additionally, these approaches are primarily relevant for publicly listed companies operating in efficient capital markets. They are less suitable for private firms or entities

with less developed capital structures in emerging markets.

4.2 Income-Based Measurement Method

Income-based methods attribute a company's excess returns to its intellectual capital. Representative methods include the Calculated Intangible Value (CIV), which estimates the value of intangible assets by capitalizing the difference between the firm's return on net assets and the industry average, and Economic Value Added (EVA), which measures residual wealth by subtracting the cost of all capital from after-tax operating profit, thereby reflecting the efficiency of capital employment including intellectual capital (Bronzetti et al., 2021).

While these methods help establish a connection between intellectual capital and profitability, they are not without challenges. A significant issue is reverse causality: the valuation of intellectual capital is inferred from financial performance outcomes rather than measured directly from its inputs, which may confuse causes with effects. Furthermore, selecting benchmarks, such as industry average returns or cost of capital—involves discretionary judgment, introducing subjectivity that can affect the objectivity and comparability of the results.

Table 3 Comparison of Main Measurement Methods Based on the "Premium Perspective"

Method Type	Representative Method/Model	Principle	Advantages	Disadvantages
Market-based Methods	Market-to-Book Value Difference	Market Value – Book Value of Net Assets	Simple computation; data readily available	Highly vulnerable to market noise
	Tobin's q	Market Value / Asset Replacement Cost	Intuitive indicator of intangible advantage	Limited by market efficiency conditions
Income-based Methods	Calculated Intangible Value (CIV)	Capitalization of excess returns	Links intellectual capital to profitability	Reverse causality; subjective benchmarks
	Economic Value Added (EVA)	Net Operating Profit After Tax – Capital Cost	Reflects the efficiency of capital use	Cannot isolate intellectual capital contribution

5. Integration of Intellectual Capital Measurement Methods and the Construction of a New Framework

The analysis above demonstrates that existing intellectual capital measurement methods have limitations: methods under the "constitutive view" excel in internal structure analysis but struggle with monetization aggregation. In contrast, methods under the "premium view" are effective in capturing overall value but fail to reveal the black box of value creation. This study introduces the

Intellectual Capital Integrated Measurement Model (ICIM), a hybrid framework synthesizing constituent-centric and market-centric paradigms to achieve a more scientific and comprehensive intellectual capital measurement.

5.1 Core Idea of the ICIM Model

The core innovation of the ICIM (Intellectual Capital Integrated Measurement) model lies in its transcendence of the traditional "either/or" dichotomous perspective, achieving an organic integration of the "constitutive view" (internal composition) and the "premium view" (market premium) of intellectual capital. The fundamental logic of this model posits that a company's market premium (external manifestation) is collectively determined by the intrinsic quality of its intellectual capital components and their synergistic effects (internal drivers). This integrated framework is grounded in three key principles: First, the Principle of Two-Way Verification emphasizes that internal quality indicators and external market value can mutually corroborate each other, thereby significantly enhancing the reliability and validity of the evaluation results. Second, the Principle of Dynamic Adjustment enables model parameters to adapt to changes in the market environment and industry characteristics, making the measurement outcomes more dynamic and forward-looking. Third, the Principle of Structural Transparency dismantles the black-box nature of traditional premium-based approaches, clearly revealing the specific contribution pathways and magnitude of each intellectual capital element to the total value. Together, these principles not only strengthen the systematic and scientific rigor of intellectual capital measurement but also provide a more comprehensive and robust theoretical foundation for corporate valuation and managerial decision-making.

5.2 Three-Module Design of the ICIM Model

The Integrated Measurement Model for Intellectual Capital (ICIM) is an integrated framework for measuring intellectual capital, consisting of three interconnected and logically progressive modules: internal value driver assessment, external market correction valuation, and value linkage and dynamic allocation mechanism. These modules systematically address key challenges in intellectual capital measurement, namely, how to organically integrate internal composition with external performance, quality indicators with monetary values, and static inventory with dynamic forecasting.

5.2.1 Module One: Multidimensional Internal Value Driver Assessment

The core objective of this module is to deeply deconstruct the "black box" of intellectual capital by accurately assessing the stock and quality of various types of intellectual capital through a multidimensional indicator system. Theoretical underpinnings stem from the Resource-Based View and knowledge management theories, emphasizing that the identification and measurement of firms' heterogeneous resources are crucial for understanding value creation sources. Methodologically, a layered indicator system design is adopted, decomposing intellectual capital into three core dimensions: Human Capital (HC), Structural Capital (SC), and Relational Capital (RC). Each dimension further distinguishes between leading indicators and lagging indicators to capture both value drivers and their performance outcomes simultaneously.

Specifically, the Human Capital Quality Index (HQI) encompasses indicators such as average training hours per employee, retention rate of key talents, patents per capita, and employee satisfaction, aiming to measure the potential and effectiveness of value creation through human

resources. The Structural Capital Quality Index (SQI) includes indicators like R&D intensity, process automation rate, knowledge management system utilization, and number of effective patents, reflecting the quality of the organization's internal systems, processes, and knowledge assets. The Relational Capital Quality Index (RQI) quantifies the value contribution of the firm's external relational network through indicators such as Customer Net Promoter Score (NPS), supplier collaboration depth, social media brand sentiment index, and percentage of revenue from key customers. In terms of weighting determination, this study recommends using the entropy method for objective weighting or a combination of the Delphi method and Analytic Hierarchy Process (AHP) for subjective weighting, to scientifically composite the Intellectual Capital Quality Index (ICQI). This index not only realizes the quantitative assessment of intellectual capital quality but also provides a core input variable for subsequent value linkage.

5.2.2 Module Two: Big Data and NLP-Based External Market Correction Valuation

This module aims to purify the "noise" in traditional market value, extracting a "purer" expected market value for the firm's intellectual capital. The design concept originates from the Efficient Market Hypothesis and behavioral finance, acknowledging that while market valuations are generally compelling, they are often subject to short-term irrational sentiment, industry noise, and macroeconomic fluctuations. To strip these distorting factors, this module innovatively introduces big data and Natural Language Processing (NLP) technologies.

Methodologically, the system collects multi-channel unstructured text data, including securities analyst reports, financial news sentiment, social media discussions, and industry forum opinions. Utilizing NLP for sentiment analysis and topic modeling, the market's implicit evaluations of the firm's innovation capability, brand reputation, management quality, and technological advantages are quantified. For instance, the Latent Dirichlet Allocation (LDA) model is used to extract core themes from market discussions, and a sentiment dictionary calculates sentiment polarity scores, ultimately synthesizing a "market sentiment index." This index, serving as a correction factor, adjusts the traditional market-to-book value difference (i.e., the original intellectual capital premium) to obtain an "adjusted IC premium" that more purely and stably reflects the intrinsic value of intellectual capital. This process significantly enhances the accuracy and robustness of the "premium view" measurement.

5.2.3 Module Three: Establishing Value Linkage and Dynamic Allocation Mechanism

This module is crucial for the ICIM model to achieve the integration of "constitutive" and "premium" views, aiming to establish a dynamic association model between internal quality and external value, and scientifically allocate the total value of intellectual capital to its various components accordingly. The theoretical foundation draws from value creation theories and econometrics, assuming that the firm's market premium is a function of the combined effects of the quality of its various intellectual capital elements.

In model construction, the first step is to set up an econometric model:

$$V_{ic} = \alpha + \beta_1 \cdot HQI + \beta_2 \cdot SQI + \beta_3 \cdot RQI + \epsilon \quad (2)$$

Among these variables, V_{ic} represents the total value of intellectual capital after adjustment as output by Module II. α and the residuals can be proportionally allocated or separately categorized as "synergistic value" based on their actual economic meanings. At the same time, HQI, SQI, and

RQI are the quality indices calculated for each dimension in Module I.β_1,β_2,$\beta_3$are the parameters to be estimated, representing the market's marginal contribution valuations of human, structural, and relational capital quality, respectively. ϵ is a random error term, interpretable as an unobserved synergistic value or model error.

Using historical panel or industry cross-sectional data, multiple regression analysis or structural equation modeling (SEM) is employed for parameter fitting. The resulting coefficients β not only have statistical significance but also possess important economic implications: they reveal which type of intellectual capital the market values more. Subsequently, these coefficients are used for value allocation:

5.3 Implementation Steps of the ICIM Model

To ensure the operability and replicability of the ICIM model, its implementation follows a systematic six-step process:

Data Collection and Processing: Collect comprehensive data on internal corporate operations (financial, human resources, research and development, customer data), capital market data (stock prices, financial statements), and external textual data (research reports, news, social media). Subsequently, conduct data cleaning, missing value treatment, standardization, and outlier detection to construct a high-quality analytical dataset.

Index Calculation: Based on the preprocessed data, calculate the Human Capital Quality Index (HQI), Structural Capital Quality Index (SQI), and Relational Capital Quality Index (RQI) according to the established indicator system and weights. Finally, weigh these indices to composite the Comprehensive Quality Index of Intellectual Capital (ICQI).

Market Correction: Utilize Natural Language Processing (NLP) pipelines to process textual data, generating a "Market Sentiment Index." Use this index to correct the original market-to-book value difference, calculating the purified intellectual capital premium (V_{ic}).

Model Fitting: Substitute the ICQI (or its sub-dimensional indices) and Vic into the preset econometric model. They employ appropriate statistical methods for parameter fitting, estimating the marginal contribution coefficients of each intellectual capital quality ($\beta 1, \beta 2, \beta 3$).

Value Allocation: Use the fitted coefficients to decompose and allocate the total value, Vic, to human capital (V_{hc}), structural capital (V_{sc}), and relational capital (V_{rc}).

Dynamic Update: The model is not static. Establish a process for regular (e.g., quarterly or annual) re-execution, incorporating the latest data to update index calculations, correct premiums, refit the model, and reallocate values. This enables the ICIM model to dynamically capture the evolving trends of intellectual capital value and its driving factors, providing continuous and timely decision support for corporate management.

Table 4 Structure and Components of the ICIM Model

Module	Main Function	Core Metrics/Output	Primary Data Sources
Internal Value Driver Assessment	Measures the quality and stock of each intellectual capital component	HQI, SQI, RQI, ICQI	Internal corporate operational data, management system data
External Market-adjusted Valuation	Calculates the noise-purified market premium of intellectual capital	Adjusted V_{ic}	Capital market data, unstructured financial text, big data
Value Linking & Dynamic Allocation	Establishes internal-external linkages and achieves value decomposition & dynamic prediction	$\beta_1,\beta_2,\beta_3,V_{hc},V_{sc},V_{rc}$	Historical data, industry panel data

Through the three-module design and the six-step implementation process, the ICIM model forms a complete closed-loop for intellectual capital measurement, ranging from data to value, from internal to external, and from static to dynamic, possessing both theoretical rigor and practical feasibility.

6. Intellectual Capital Reporting Strategy

As a source of enterprise value, intellectual capital is crucial for corporate management and operations; however, traditional financial accounting systems struggle to reflect it effectively. To manage intellectual capital effectively, a scientific reporting strategy must be established, providing value measurement information about intellectual capital through management accounting systems.

6.1 Design of Reporting Information Dimensions

Intellectual capital reporting should adopt a multi-dimensional information framework: Firstly, it should balance financial and non-financial information, providing both monetized value measurements and quality evaluation indicators; secondly, it should integrate static and dynamic information, reflecting both the stock status at a specific point in time and the trend of change over different periods; finally, it should consolidate quantitative and value information, including both quantitative indicators of various capital elements and assessments of their value contributions.

6.2 Dual Analytical Perspective

Intellectual capital reporting should adopt a dual analytical perspective that combines static and dynamic analyses: On one hand, based on the value information of each component of intellectual capital and the overall market value, a static analysis should be conducted to identify strengths and weaknesses in the quantity and quality of the enterprise's intellectual capital; on the other hand, combined with changes in the enterprise's economic value and time-series data of intellectual capital, a dynamic analysis should be performed to assess the ability and efficiency of the enterprise in using intellectual capital for value creation and to evaluate its development trends.

6.3 Management Accounting-Oriented Implementation Pathway

Implement the intellectual capital reporting strategy through the management accounting system: Firstly, establish an intellectual capital accounting system, setting up detailed accounts for human capital, structural capital, and relational capital; secondly, design key performance indicators for intellectual capital and establish a regular monitoring mechanism; finally, construct an intellectual capital value dashboard to provide a visual tool for internal management decision-making and external information disclosure. This reporting strategy not only guides the future development of the enterprise but also provides useful decision-making information for external stakeholders.

6.4 Differentiated Reporting Strategy

Adopt a differentiated reporting strategy for different types of enterprise characteristics: For listed companies, emphasize the role of intellectual capital information in market valuation adjustments; for innovative enterprises, focus on displaying the efficiency of research and development capitalization and knowledge asset transformation; for traditional enterprises, highlight the value of intellectual capital in empowering traditional businesses. This differentiated reporting strategy ensures that intellectual capital information matches the value creation models of various enterprises.

This reporting strategy not only improves the disclosure mechanism for intellectual capital information but also establishes a value management tool linked to corporate strategic management, making intellectual capital a core element driving enterprise value creation.

7. Conclusion and Future Outlook

This paper systematically reviews the two perspectives for defining intellectual capital and their corresponding measurement methods, analyzes their strengths and weaknesses, and proposes an integrated intellectual capital measurement model and reporting strategy. The main research conclusions are as follows:

Firstly, the “constitutive view” and the “premium view” of intellectual capital are inherently complementary. The former focuses on internal structure analysis, providing detailed evidence for internal management decisions; the latter emphasizes overall value capture, offering market benchmarks for external valuation. The organic integration of these two perspectives allows for a more comprehensive grasp of the value of intellectual capital.

Secondly, the ICIM model and the innovative reporting strategy proposed in this paper effectively bridge the information gap between internal management and external markets through a multi-dimensional information framework and a differentiated implementation path. This approach not only systematically measures the intrinsic quality of intellectual capital through refined indicators but also calibrates its overall value with market data, providing more scientific and comprehensive decision support for managers to optimize resource allocation and for investors to make value judgments.

Lastly, with the rapid development of digital technologies, especially the maturity of big data and natural language processing, the accuracy and timeliness of intellectual capital measurement will be significantly improved. Future research can further explore the application of artificial

intelligence technologies in the measurement and reporting of intellectual capital, such as using machine learning algorithms to automatically identify value drivers or employing predictive models to assess the future value-creation potential of intellectual capital.

This paper's intellectual capital reporting strategy requires further testing and refinement. In particular, the adaptability of this strategy in different industries and firms of varying sizes, as well as the standardization of the corresponding indicator systems and parameters, all need continuous exploration in subsequent research. Additionally, the authentication mechanisms and auditing standards for intellectual capital information are also key research topics for the future.

The journey of researching intellectual capital is far from over, but moving from isolated methods to integrated frameworks, from static descriptions to dynamic predictions, is undoubtedly the inevitable direction for solving this challenging problem. Establishing a scientific and comprehensive intellectual capital measurement system and reporting strategy can not only truly reflect the value-creation capability of enterprises in the knowledge economy era but also effectively guide resource allocation and promote high-quality economic development.

References

1. Abdallah, A. S., Amin, H., Abdelghany, M., & Elamer, A. A. (2024). Antecedents an d consequences of intellectual capital: a systematic review, integrated framework, and agenda for future research. Management Review Quarterly. https://doi.org/10.1007/s113 01-024-00454-9
2. Abdelfattah, F., Salah, M., Dahleez, K., Darwazeh, R., & Al Halbusi, H. (2024). The future of competitive advantage in Oman: Integrating green product innovation, AI, and intellectual capital in business strategies. International Journal of Innovation Studies, 8(2), 154–171. https://doi.org/10.1016/j.ijis.2024.02.001
3. Alwis, D., Hlupic, V., & Fitzgerald, G. (n.d.). Intellectual capital factors that impact of value creation. IEEE Transactions on Image Processing, 411–416. https://doi.org/10. 1109/iti.2003.1225378
4. Asiaei, K., & Jusoh, R. (2017). Using a robust performance measurement system to illuminate intellectual capital. International Journal of Accounting Information Systems, 26, 1–19. https://doi.org/10.1016/j.accinf.2017.06.003
5. Azamat, K., Galiya, J., Bezhan, R., & Nurdana, Z. (2023). The impact of intangible assets on the value of FMCG companies worldwide. Journal of Innovation & Knowledge, 8(1), 100330. https://doi.org/10.1016/j.jik.2023.100330
6. Bayraktaroglu, A. E., Calisir, F., & Baskak, M. (2019). Intellectual capital and firm performance: an extended VAIC model. Journal of Intellectual Capital, 20(3), 406–425. https://doi.org/10.1108/jic-12-2017-0184
7. Bhakar, S., Sharma, P., & Kumar, S. (2024). Ownership Structure and Firm Performance: A Comprehensive Review and Empirical Analysis. Journal of the Knowledge Economy, 15(4), 19824–19865. https://doi.org/10.1007/s13132-024-01893-1
8. Bronzetti, G., Sicoli, G., Chiucchi, M. S., & Giuliani, M. (2021). Intellectual Capital Measurement, Management, and Valuation. In SIDREA Series in Accounting and Busi ness Administration (pp. 21–32). Springer International Publishing. https://doi.org/10.10 07/978-3-030-80737-5_2
9. Chatterjee, S., Chaudhuri, R., Mariani, M., & Fosso Wamba, S. (2023). Examining the role of intellectual capital on knowledge sharing in digital platform-based MNEs and its impact on firm performance. Technological Forecasting and Social Change, 197, 122909. https://doi.org/10.1016/j.techfore.2023.122909

10. Chen, L., Tao, S., Xie, X., Huang, W., & Zhu, W. (2024). The evaluation of innovation efficiency and analysis of government subsidies influence—Evidence from China's metaverse listed companies. Technological Forecasting and Social Change, 201, 123213. https://doi.org/10.1016/j.techfore.2024.123213
11. Edvinsson, L. (1997). Developing intellectual capital at Skandia. Long Range Planning, 30(3), 366–373. https://doi.org/10.1016/s0024-6301(97)90248-x
12. Farzaneh, M., Wilden, R., Afshari, L., & Mehralian, G. (2022). Dynamic capabilities and innovation ambidexterity: The roles of intellectual capital and innovation orientation. Journal of Business Research, 148, 47–59. https://doi.org/10.1016/j.jbusres.2022.04.030
13. He, D.-S., Liu, T.-W., & Lin, Y.-Y. (2024). Efficiency evaluation of intellectual capital for value creation: a case study of the semiconductor industry in Taiwan. Journal of Intellectual Capital, 25(4), 744–774. https://doi.org/10.1108/jic-11-2023-0259
14. Ho Kim, S., & Taylor, D. (2014). Intellectual capital vs the book-value of assets. Journal of Intellectual Capital, 15(1), 65–82. https://doi.org/10.1108/jic-04-2013-0048
15. Khan, A. N., Mehmood, K., & Kwan, H. K. (2024). Green knowledge management: A key driver of green technology innovation and sustainable performance in the const ruction organizations. Journal of Innovation & Knowledge, 9(1), 100455. https://doi.org/10.1016/j.jik.2023.100455
16. Motohashi, K., & Zhu, C. (2023). Identifying technology opportunity using dual-attention model and technology-market concordance matrix. Technological Forecasting and Social Change, 197, 122916. https://doi.org/10.1016/j.techfore.2023.122916
17. Pérez, C. Á., Montequín, V. R., Fernández, F. O., & Balsera, J. V. (2017). Integration of Balanced Scorecard (BSC), Strategy Map, and Fuzzy Analytic Hierarchy Process (FAHP) for a Sustainability Business Framework: A Case Study of a Spanish Software Factory in the Financial Sector. Sustainability, 9(4), 527. https://doi.org/10.3390/su9040527
18. Rodov, I., & Leliaert, P. (2002). FiMIAM: financial method of intangible assets measurement. Journal of Intellectual Capital, 3(3), 323–336. https://doi.org/10.1108/14691930210435642
19. Salgado-Criado, J., Mataix-Aldeanueva, C., Nardini, S., López-Pablos, C., Balestrini, M., & Rosales-Torres, C. S. (2024). How should we govern digital innovation? A ve nture capital perspective. Technological Forecasting and Social Change, 200, 123198. https://doi.org/10.1016/j.techfore.2023.123198
20. Ståhle, P., Ståhle, S., & Aho, S. (2011). Value added intellectual coefficient (VAIC): a critical analysis. Journal of Intellectual Capital, 12(4), 531–551. https://doi.org/10.1108/14691931111181715
21. Swartz, G. E., Swartz, N., & Firer, S. (2006). An empirical examination of the value relevance of intellectual capital using the Ohlson (1995) valuation model. Meditari Accountancy Research, 14(2), 67–81. https://doi.org/10.1108/10222529200600013
22. Vo, D. H., & Tran, N. P. (2024). Does Digital Transformation Moderate the Effect of Intellectual Capital on Firm Performance? Journal of the Knowledge Economy, 16(2), 9266–9288. https://doi.org/10.1007/s13132-024-02270-8