

Measuring the impact of intellectual capital (VAIC) on company value: The mediating role of financial performance

An Analytical Study of a Sample of Publicly Traded Companies in the Industrial Sector

Listed on the Iraq Stock Exchange

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Abstract: This study examines the impact of intellectual capital on firm value, emphasizing the mediating role of financial performance. It applies the Value Added Intellectual Coefficient (VAIC) model to a sample of industrial companies listed on the Iraq Stock Exchange. The main problem addressed is that many firms continue to rely primarily on physical capital while neglecting human capital and innovation, which are essential components of intellectual capital and key drivers of competitive advantage and value creation.

A descriptive-analytical methodology was adopted to investigate the relationships among the study variables. Financial data were collected from the annual reports of 11 industrial companies over a five-year period from 2020 to 2024, resulting in 55 observations. The data were analyzed using correlation matrix analysis, linear regression, and the SPSS statistical package to test the research hypotheses and determine the nature of relationships among variables.

The study variables include intellectual capital as the independent variable, measured through human capital, structural capital, and capital employed. Financial performance is treated as a mediating variable and measured using indicators such as return on assets, return on equity, earnings per share, and net profit margin. Firm value is the dependent variable and is measured by the year-end closing share price.

The findings indicate a significant positive relationship between intellectual capital and financial performance, as well as between financial performance and firm value. The results further show that intellectual capital has an indirect effect on firm value through financial performance, confirming the mediating role of financial performance. Additionally, the impact of intellectual capital components varies, with human capital and capital employed showing stronger effects than structural capital. Overall, the study concludes that improving intellectual capital efficiency enhances financial performance and ultimately increases firm value in industrial companies.

Keywords: Intellectual capital, financial performance, company value, VAIC model

1-INTRODUCTION

The world is witnessing a significant shift in the criteria of institutional success, where intellectual capital has become a key driver of competitiveness and sustainable value creation in the modern business environment. Companies are no longer evaluated solely based on their physical or financial assets, but through a broader perspective that includes intellectual capital and its three components: human, structural, and capital employed. Intellectual capital is increasingly recognized as a primary source of growth, innovation, and long-term value generation. In this context, the Value Added Intellectual Coefficient (VAIC) model plays an important role in measuring the efficiency of intellectual capital utilization across its different components. This study emphasizes the importance of applying the VAIC model to assess how effectively companies invest in intellectual capital and how this investment enhances financial performance, which in turn acts as a mediating variable between intellectual capital and firm value. The study also explores the complex relationships among these variables and seeks to identify strategies for optimizing intellectual capital management to achieve sustainable financial outcomes.

Furthermore, this research is grounded in a strong theoretical and methodological framework aimed at deepening the understanding of intellectual capital's impact on firm value, with particular attention to the mediating role of financial performance. It is expected that the findings will provide decision-makers with practical insights to improve the utilization of

intellectual capital, thereby strengthening firms' ability to adapt, innovate, and grow in dynamic and competitive environments.

The study is structured into four main sections: the first presents the methodological framework including the research problem, objectives, significance, and hypotheses; the second reviews the theoretical background of intellectual capital, financial performance, firm value, and the VAIC model; the third presents the empirical analysis, including variable description, hypothesis testing, and results interpretation; and the fourth provides the main conclusions and recommendation

RESEARCH METHODOLOGY

2-THE PROBLEM OF THE SEARCH

In light of the rapid transformation of companies and the shift in managers' focus towards the knowledge economy and the importance of innovation and knowledge in company growth, the intangible assets that comprise intellectual capital have become a crucial factor in determining a company's value and sustainability in the competitive market. However, many companies still focus solely on physical capital and overlook the critical importance of human capital and innovation as essential components of intellectual capital. Despite the development of a model such as VAIC (Value-Added Intellectual Efficiency) to measure the efficiency of intellectual capital utilization, the relationship between this efficiency and company value remains a subject of debate among researchers and may vary from one sector to another and from one economic environment to another. Financial performance may also play a mediating role in this relationship, as investment in intellectual capital contributes to enhancing the efficiency of financial performance, which in turn boosts the company's market value. Based on the above, the problem addressed in this study can be formulated through a number of questions, as follows:

1. How does the efficiency of intellectual capital, with its three components (human, structural, and physical), affect company value through the application of the VAIC value-added factor?
2. How does financial performance contribute to the relationship between intellectual capital and company value, acting as an intermediary variable between the two?
3. How can the efficiency of intellectual capital utilization be measured using the VAIC model, which in turn contributes to achieving a competitive advantage for companies?

3- SEARCH OBJECTIVES

1. Analyze the impact of intellectual capital on the value of publicly traded companies in the industrial sector.
2. Measure the effectiveness of intellectual capital utilization in industrial companies using the VAIC model, focusing on its impact on the company's financial performance and, consequently, its market value.
3. Analyze the mediating role of financial performance in the relationship between intellectual capital and company value.

4-THE IMPORTANCE OF THE SEARCH

The significance of this study lies in its provision of a methodological framework for analyzing the relationship between intellectual capital and financial performance, and its impact on company value. It also contributes to enriching the academic literature in the field of knowledge management and intellectual capital by applying the VAIC model in new contexts. Furthermore, this study allows companies to understand how to optimize the use of intellectual capital to increase their market value and achieve sustainable financial performance.

The study's importance is further underscored by its pursuit of understanding the role of intellectual capital as an effective strategic tool for enhancing company value in the knowledge age. With the increasing reliance on knowledge and innovation as primary sources of growth and competitiveness, it has become essential to rethink how this intangible capital is measured and utilized. The study aims to present a new conceptual framework through the VAIC model, which represents a precise measurement tool for the effectiveness of intellectual capital in achieving outstanding organizational performance. Moreover, the study's significance is highlighted by emphasizing the role of financial performance as a crucial link between intellectual capital and company value, thus enhancing our understanding of the indirect relationship between these elements.

5-THE SCOPE OF THE SEARCH

1. Spatial Scope: The study was limited to publicly traded companies in the industrial sector listed on the Iraq Stock Exchange.
2. Temporal Scope: The study adopted a specific period of five years, encompassing 55 observations, to ensure a comprehensive analysis of trends and developments in the efficiency of intellectual capital utilization and its impact on company value—specifically, the mediating role of financial performance. Financial indicators for the publicly traded companies in the industrial sector sample were selected for the years 2020-2024.

6-THE HYPOTHETICAL SCHEME OF THE SEARCH

This framework aims to provide a systematic approach to examining the relationship between intellectual capital, financial performance, and the value of publicly traded companies in the industrial sector. The hypothetical framework is based on the VAIC model to measure the efficiency of intellectual capital utilization and its role in improving financial performance. It also explores the interaction of these factors to increase company value. The main variables of the study are as follows:

- 1- Independent Variable: Intellectual Capital: This includes three main components:
 - Human Capital: The knowledge, skills, and experience possessed by employees (Cecchi, 2024:3).
 - Structural Capital: The processes, systems, and organizational structures that support innovation and efficiency (Marzo, 2022:552).
 - Physical Capital: Assets, including funds, machinery, equipment, land, and buildings (Marzo, 2022:552).
- 2- Mediating Variable: Financial Performance: This is measured through financial indicators such as Return on Assets (ROA) (Singh et al., 2024:27), Return on Equity (ROE) (Ichsani & Suhardi, 2015:898), Earnings Per Share (EPS) (Islam et al., 2014:97), and Net Profit Margin (NPM) (Maryoso & Sari, 2022:82). Financial performance is evaluated for its role as a mediating factor between intellectual capital and company value.
- 3- The dependent variable is the value of the company: It is usually measured by the closing price of the stock at the end of the year (Afşar & Karaçayır, 2020:14), as the closing price is an indicator that reflects the market value of the company in the market, and this price expresses investors' evaluation of the company's performance and their future expectations regarding its ability to make profits.

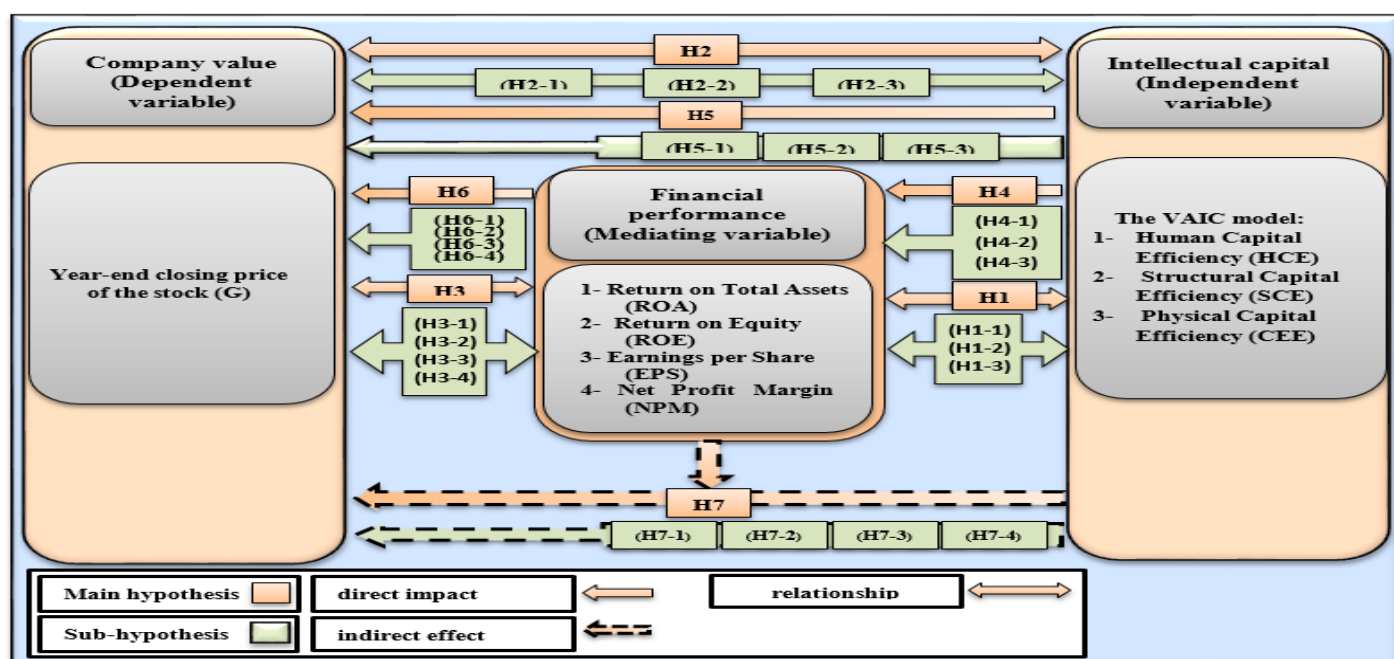


Figure (1) the hypothetical scheme of the Search.

Source: Prepared by the researchers

7- SEARCH HYPOTHESES

7-1 Correlation Hypotheses:

1- **Main Hypothesis 1 (H1):** There is a statistically significant positive correlation between intellectual capital and financial performance.

- Sub-hypothesis 1 (H1-1): There is a statistically significant positive correlation between human capital and financial performance.
- Sub-hypothesis 2 (H1-2): There is a statistically significant positive correlation between structural capital and financial performance.
- Sub-hypothesis 3 (H1-3): There is a statistically significant positive correlation between physical capital and financial performance.

2- **Main Hypothesis 2 (H2):** There is a statistically significant positive correlation between intellectual capital and company value.

- Sub-hypothesis 1 (H2-1): There is a statistically significant positive correlation between human capital and company value.
- Sub-hypothesis 2 (H2-2): There is a statistically significant positive correlation between structural capital and company value.
- Sub-hypothesis 3 (H2-3): There is a statistically significant positive correlation between physical capital and company value.

3- **Main hypothesis 3 (H3):** There is a statistically significant positive correlation between financial performance and company value.

- Sub-hypothesis 1 (H3-1): There is a statistically significant positive correlation between return on assets (ROA) and company value.
- Sub-hypothesis 2 (H3-2): There is a statistically significant positive correlation between return on equity (ROE) and company value.
- Sub-hypothesis 3 (H3-3): There is a statistically significant positive correlation between earnings per share (EPS) and company value.
- Sub-hypothesis 4 (H3-4): There is a statistically significant positive correlation between net profit margin (NPM) and company value.

7-2 Direct Effect Hypotheses:

4- **Main hypothesis 4 (H4):** There is a statistically significant positive direct effect of intellectual capital on financial performance.

- Sub-hypothesis 1 (H4-1): Human capital has a direct, statistically significant positive effect on financial performance.
- Sub-hypothesis 2 (H4-2): Structural capital has a direct, statistically significant positive effect on financial performance.
- Sub-hypothesis 3 (H4-3): Physical capital has a direct, statistically significant positive effect on financial performance.

5- **Main hypothesis 5 (H5):** Intellectual capital has a direct, statistically significant positive effect on company value.

- Sub-hypothesis 1 (H5-1): Human capital has a direct, statistically significant positive effect on company value.
- Sub-hypothesis 2 (H5-2): Structural capital has a direct, statistically significant positive effect on company value.
- Sub-hypothesis 3 (H5-3): Physical capital has a direct, statistically significant positive effect on company value.

6- **Main Hypothesis Six (H6):** There is a direct, statistically significant positive effect of financial performance on market value.

- Sub-Hypothesis One (H6-1): There is a direct, statistically significant positive effect of return on assets (ROA) on company value.

- Sub-Hypothesis Two (H6-2): There is a direct, statistically significant positive effect of return on equity (ROE) on company value.
- Sub-Hypothesis Three (H6-3): There is a direct, statistically significant positive effect of earnings per share (EPS) on company value.
- Sub-Hypothesis Four (H6-4): There is a direct, statistically significant positive effect of net profit margin (NPM) on market value.

7-3 Hypotheses of Indirect Effects:

7- Main Hypothesis Seven (H7): There is a direct, statistically significant positive effect of intellectual capital on company value through financial performance.

- Sub-hypothesis 1 (H7-1): Intellectual capital has a statistically significant positive indirect effect on firm value through return on assets (ROA) as a mediating variable.
- Sub-hypothesis 2 (H7-2): Intellectual capital has a statistically significant positive indirect effect on firm value through return on equity (ROE) as a mediating variable.
- Sub-hypothesis 3 (H7-3): Intellectual capital has a statistically significant positive indirect effect on firm value through earnings per share (EPS) as a mediating variable.
- Sub-hypothesis 4 (H7-4): Intellectual capital has a statistically significant positive indirect effect on firm value through net profit margin (NPM) as a mediating variable.

8- THE SEARCH SCALE

Table (1) illustrates the research variables and dimensions, and the scales used in developing the current research scale to align with the environment of joint-stock companies in the Iraqi industrial sector. Table (1) also details the research variables and dimensions, the number of items, and the adopted scale.

Table (1) Study variables, dimensions, number of paragraphs, and adopted measures

sequence	variants	dimensions	Paragraphs No.	scale
1	Intellectual capital	vaic		
		Human capital efficiency	3	(Cecchi, 2024)
		Structural capital efficiency	552	(Marzo, 2022)
		Physical capital efficiency	552	(Marzo, 2022)
2	Financial performance	Return on Total Assets	27	(Singh et al., 2024)
		Return on Total Equity	898	(Ichsani & Suhardi, 2015)
		Return on Total Shares	97	(Islam et al., 2014)
		Net Profit Margin	82	(Maryoso & Sari, 2022)
3	Company value	Closing price of the stock at the end of the year	14	(Afşar & Karaçayır, 2020)

Source: Prepared by the researchers

9- THE STUDY POPULATION AND SAMPLE

The study population consisted of industrial companies listed on the Iraq Stock Exchange, while the study sample consisted of (20) publicly traded companies in the same industrial sector. The sample was selected according to the following criteria: the companies had to be listed on the Iraq Stock Exchange from the beginning of the study period (2020) until its end (2024). Companies that did not regularly publish financial indicators during the study period and companies that did not have the data required for the study were excluded. After applying these criteria to the study population, (9) companies were excluded, leaving a final sample of (11) companies.

10- Data Analysis Methods

1. Descriptive Statistics: This method was used to summarize data from 11 companies over a 5-year period (55 observations). The measures used included the mean and standard deviation to measure dispersion, and minimum and maximum values to determine the data range.
2. Pearson Correlation Matrix: This method was used to reveal the direction and strength of the two-way relationships between the study variables, providing an initial indication of the consistency of the assumed relationships.
3. Linear Regression Analysis: Linear regression analysis and mediation relationship testing were employed using Macro Process (Hayes, 2022). This tool offers advanced analytical capabilities for testing causal models, estimating direct and indirect effects, and verifying the significance of statistical pathways using bootstrap resampling. Here, the study examined how the impact of intellectual capital is transferred to market value through mediating "channels" (earnings per share, EPS, and net profit margin, NPM). The indirect effect was calculated to determine whether the mediating variable explains the relationship between the independent and dependent variables.
4. Bootstrapping Significance Test: The study used the LLCI (Lower Confidence Interval) and ULCI (Upper Confidence Interval) criteria with a significance level of 95%.
5. SPSS Software: Used for basic statistical analysis and correlation tests.
6. Process Macro: A specialized tool within SPSS used exclusively for analyzing mediating and adjusting effects. It was used to extract the results for the indirect effect analysis.

THE THEORETICAL FRAMEWORK OF THE SEARCH

1- Intellectual capital

1.1- The Concept of Intellectual Capital:

The historical origins of the concept of intellectual capital can be traced back to its introduction in the 19th century by the German economist Friedrich List in 1841. He defined it as that which pertains to nations or humanity through the accumulation of discoveries, inventions, knowledge, efforts, and so on from previous generations (Bueno et al., 2008:41) Intellectual capital was also studied in the 1960s as a means of gaining a competitive advantage in knowledge-based industries and learning, as well as in the growth of information and communication technologies. The first studies were conducted in 1969 by John Kenneth Galbraith, who described intellectual capital as an integrated whole that provides a competitive advantage for businesses (Ali et al., 2022:1) A study by (Andriessen2004:3) confirmed that intellectual capital includes all the knowledge possessed by its members and the practical translation of that knowledge into brands and reputable operations. Table (2) presents some concepts of capital. The intellectual perspective from the point of view of a number of researchers and writers:

Table (2)Some researchers' views on the concept of intellectual capital

sequence	researcher and year	Concept
1	(Meles <i>et al.</i> , 2016: 6)	Intellectual capital is a collection of intangible assets, including knowledge and experience, that can be invested to create value for a company. It comprises three main components: human capital, structural capital, and physical capital.
2	(Nadeem <i>et al.</i> , 2017: 65)	The sum total of all the skills and competencies that employees possess that create wealth for companies.
3	(Chowdhury <i>et al.</i> , 2019: 784)	The company's knowledge-based assets constitute a source of competitive advantage for companies.
4	(Xu & Liu, 2020: 161)	Intellectual capital (IC) is considered an important driver for improving the competitiveness of companies and generating value in the knowledge economy.
5	(Alvino <i>et al.</i> , 2021: 77)	Intellectual capital is considered an invisible activity that includes individuals, the art of manufacturing and learning (human capital), organizational and technological culture and the culture of the organization (structural capital), and the optimal use of tangible resources (physical capital).
6	(Asutay & Ubaidillah, 2024: 1233)	A collection of experiences, information, knowledge and intellectual property rights controlled by the company, which can be used in its business operations to create value.
7	(Olani <i>et al.</i> , 2025: 14)	A key indicator of a company's success, as it demonstrates its ability to generate profit and create value for shareholders, companies seeking to improve their performance must recognize that intellectual capital is an intangible strategic asset.

Source: Prepared by the researcher based on human resource management literature.

From the above, researchers believe that intellectual capital is one of the main means that companies rely on heavily to achieve a long-term competitive advantage, as it effectively contributes to achieving sustainable growth and creating value for the company through intangible assets represented by knowledge resources and employee experience, which are successfully utilized. Intellectual capital often consists of three main components that give added value to companies based on skills, capabilities, and learning in human capital; organizational culture, processes, and brand in structural capital; and the efficient use of funds and equipment in physical capital. Thus, it increases the value of companies and achieves a sustainable competitive advantage.

1.2- Dimensions of intellectual capital

Intellectual capital is measured using the Vaik model, developed by Polich (2000). This model provides a quantitative framework based on accounting data for assessing the efficiency of intellectual capital (Sonnarno & Khai, 2025: 111) It is one of the most well-known and widely used models in scientific research and practical application (Secchi, 2024: 2) Polich is considered a pioneer in intellectual capital research, as he focused on the relationship between foreign direct investment and economic performance and was the first to prove this relationship. The analysis relies on financial indicators in the company's balance sheet. The model aims to measure the extent to which companies produce intellectual added value based on the efficiency of their intellectual capital or intellectual resources. Intellectual capital is a powerful and intangible strategic resource capable of transforming a national company into a multinational or even a transnational corporation (Marzo, 2021: 3) In a more competitive knowledge economy, measuring and managing intellectual capital becomes crucial, as industrial sectors play a vital role in the growth of the global economy (Makki & Lodhi, 2008: 83) The efficiency of intellectual capital can be measured through indicators such as the following (Secchi, 2024: 34):

1.2.1- Human Capital Efficiency (HCE):

In a globalized and ever-changing world, increased efficiency has become a necessity, not an option, for any company in a knowledge-based economy. The efficient use of resources, particularly intellectual resources, is a crucial factor in assessing an organization's economic strength Because intellectual resources are often invisible, measuring and managing them is challenging Measuring human capital efficiency provides valuable information for management (Veselinović et al., 2021:1) Human capital efficiency is an indicator of employee skills, general knowledge, innovation, and capabilities, which are essential in a dynamic business environment (Tran & Vo, 2020:5) It is calculated through:

$$HCE = \frac{VA}{HC} \times 100\% \quad \text{.....(1)}$$

1.2.2- Structural capital efficiency (SCE):

Structural capital efficiency refers to the effectiveness and efficiency of a company's intangible assets, which contribute significantly to its overall effectiveness, efficiency, and competitiveness. Structural capital consists of non-material elements often rooted in the company's systems, structure, processes, culture, and knowledge base. It represents the infrastructure and intellectual resources that support the company's operations and enable it to create value (Nasiru et al., 2024:298). It serves as an indicator of a company's success in value creation and measures the amount of structural capital required to produce added value (Batubara et al., 2021:67). It is calculated through:

$$SCE = \frac{SC}{VA} \times 100\% \quad \text{.....(2)}$$

$$= \frac{VA - HC}{VA}$$

1.2.3- Efficiency of physical capital used (CEE):

It is a measure of physical capital, as this ratio gives the contribution of each unit of fixed assets, machinery, equipment and funds to the value added of the company and is calculated as follows (Rong et al., 2025:17574):

$$CEE = \frac{VA}{CE} \times 100\% \quad \text{.....(3)}$$

When summarizing the results for all components of intellectual capital, the efficiency of intellectual capital is extracted using the basic formula:

$$VAIC = HCE + SCE + CEE$$

2- Financial performance

2.1- The concept of financial performance

Financial performance is the product of financial reports prepared by the company in accordance with financial regulations. The evaluation of the success of any business project depends largely on its financial performance (Aprilyana & Sari, 2025:8949). Financial performance (FP) shows the extent of the company's effectiveness and efficiency in achieving its goals. Effectiveness refers to the management's ability to choose an accurate goal or tool to achieve specific objectives, while efficiency refers to the ratio between inputs and outputs (Ajar, 2018:19). Table No. (3) presents some concepts of financial performance from the perspective of a number of researchers and writers:

Table (3) Some researchers' views on the concept of financial performance.

sequence	researcher and year	Concept
1	(Mohsin et al., 2020:407)	It is a measure of a company's ability to use its assets to generate revenue, and this process is essential for the sustainability of any company.
2	(Tudose et al., 2022: 122)	The company's ability to create economic value and attract and generate returns for investors.
3	(Eldomiaty et al., 2023: 3)	It is a measure of a company's ability to acquire and allocate resources in a variety of ways to achieve a competitive advantage.
4	(Aranda & Wardani, 2024:7276)	It is a series of financial activities over a specific period of time, which are included in the financial statements.
5	(Tutar et al., 2025: 197)	A key indicator for assessing the effectiveness and sustainability of any company under competitive market dynamics, financial performance measures the extent to which strategic objectives have been achieved and provides critical insights into the company's position in its sector.

Source: Prepared by researchers based on financial management literature.

Based on the above, the researchers believe that financial performance reflects a company's ability to achieve its financial goals through effective asset management and achieving financial sustainability and profitability. Understanding financial performance is an essential part of making strategic decisions aimed at enhancing financial efficiency and achieving added value for shareholders.

2.2- Financial Performance Dimensions

The study relied on profitability ratios to measure financial performance, namely return on total assets (ROA), return on equity (ROE), return on shares (EPS), and net profit margin (NPM) (Baby et al., 2024:10), as they measure the company's ability to generate profits and indicate the efficiency of management in using available resources optimally to achieve profits (Alawi, 2019:37). The following are the financial performance indicators:

2.2.1- Return on Total Assets (ROA)

The return on total assets is an indicator of the company's profitability compared to its total assets. It gives an idea of the management's efficiency in using its assets to generate profits (Adekunle & Aghedo, 2014:54) and is of great importance as a guide for companies to achieve profits from the assets used (Endri et al., 2019:339). This rate is used to measure the management's ability to achieve total profits. The higher the return on assets rate, the higher the level of profit achieved by the company, and the better its position in terms of asset utilization. The return on total assets is calculated by dividing net income by total assets (Singh et al., 2024:29).

$$ROA = \frac{NET\ INCOME}{TOTAL\ ASSETS} \times 100\% \quad \dots\dots\dots (1)$$

2.2.2- Return on Equity (ROE)

The income available to the owner of the capital invested by the company is measured by the return on equity. This rate aims to know and measure the rate of return on the private capital from the shares invested in the company through the amount of income or profit that the company achieves. Companies with a high value of return on equity are considered to be companies with better performance. The level of return on equity is positively related to the share price, as the higher the return on equity, the higher the market price. Return on equity is measured by dividing net income by total equity (Ichsani & Suhardi, 2015: 898).

$$ROE = \frac{NET\ INCOME}{TOTAL\ EQUITY} \times 100\% \quad \dots\dots\dots (2)$$

2.2.3- Return on Equity (EPS)

Earnings per share is one of the most important terms in the stock market because it significantly impacts the demand for a company's shares compared to another (Al-Hajri, 2016:48). Investors in the capital market need to be precise in their stock-related decisions. Accurate stock valuation reduces risk and prevents errors in decision-making (Tantra et al., 2022:89–90). Return on equity is measured by dividing net income less preferred stock dividends by the average number of preferred shares (Islam et al., 2014:98).

$$EPS = \frac{NET\ INCOME - DIVIDEND\ ON\ PREFERRED\ STOCK}{AVERAGE\ OUTSTANDING\ SHARES} \times 100\% \quad .. (3)$$

2.2.4- Net Profit Margin (NPM)

This ratio is a measure of the amount of net profit earned after interest and taxes for each dinar of net sales or revenue. The highest ratio indicates the most profitable company, which has better control over costs compared to other competing companies. The net profit margin reflects the company's ability to generate profit from sales (Tudose et al., 2022: 122). The net profit margin can be calculated by dividing net profit by sales (Maryoso & Sari, 2021: 85).

$$NPM = \frac{NET\ PROFIT}{SALES} \times 100\% \quad \dots\dots\dots (4)$$

3- Firm Value

3.1- The Concept of Firm Value

The concept of company value is represented by the prevailing market value or the price of the company's shares. Company value can achieve prosperity or profit for shareholders in general (Dewi, 2019: 18). It also expresses the state that the company has reached through the process of all activities since the company's establishment until now to gain the trust of the public (Bestar & Damayanty, 2023: 3). Table No. (4) presents some concepts of company value from the point of view of a number of researchers and writers:

Table (4)Some researchers' views on the concept of firm value.

sequence	researcher and year	Concept
1	(Koseoglu & Almeany, 2020: 9)	It is the buying and selling price of shares in the market based on fluctuations in supply and demand.
2	(Natsir & Bangun, 2021: 102)	The selling price of the company that potential investors would consider appropriate upon its liquidation.
3	(Suzan & Ramadhani, 2023:401)	It is represented by the company's performance, which is perceived as the value of the shares and can reflect general perceptions of the company's prospects.
4	(Amimakmur et al., 2024:1)	The value of a company is represented by investors' perceptions of the company, which are often closely related to its stock price.
5	(Necib, Feidi, & Jarboui, 2025: 7)	The company's value represents a specific state that the company has reached during a process that has lasted for several years since its establishment until the present time.

Source: Student prepared based on financial management literature

Based on the above, researchers believe that a company's value represents a comprehensive assessment of its ability to create wealth in the long term through its financial and intellectual strategies. This assessment is closely linked to intellectual capital, which includes intangible resources that are a key driver of sustainable growth.

3.2-Firm Value Dimension

The company's value index is a fundamental tool in financial analysis, used to measure a company's ability to maximize shareholder wealth and achieve sustainable economic value. The index reflects the market's assessment of the company's performance and its efficiency in utilizing its resources. It is a useful metric for providing information about a company's past performance and future prospects as it develops over time (Said & Kaplelach, 2019:201) A company's value can be measured through its annual closing price and serves as an indicator for measuring the stock's market capitalization at the end of the year through the percentage change (growth) (Afşar & Karaçayır, 2020:13-14) It is calculated as follows:

$$G = \frac{P1 - P0}{P0} \times 100 \%$$

THE PRACTICAL SIDE OF THE SEARCH**1- Displaying The Intellectual Capital Indicators Results For Each Company:****1.1- Baghdad Soft Drinks Company:**

Table (5) shows a gradual improvement in the intellectual capital efficiency of Baghdad Soft Drinks Company during the study period (2020–2024), following a relative decline in 2021 and 2022. This improvement was primarily driven by increased efficiency in human capital, which was the most significant contributor to value creation, compared to the employed and structural capital, which remained at relatively stable levels.

Table (5): Intellectual Capital Indicators for Baghdad Soft Drinks Company

YEAR	CEE	HCE	SCE	VAIC
2020	0.22	2.58	0.61	3.43
2021	0.14	2.22	0.55	2.92
2022	0.30	6.52	0.85	7.68
2023	0.28	6.61	0.85	7.74
2024	0.29	7.56	0.87	8.72

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange.

1.2- Modern Sewing Company:

Table (6) shows a clear fluctuation in the intellectual capital efficiency of Modern Sewing Company during the study period (2020–2024). VAIC values were negative at the beginning of the period, indicating the company's limited ability to create added value from its existing resources at that stage. This decline is primarily attributed to the low efficiency of structural capital and a lack of investment in the company's structure and systems, while the contributions of the other two components (human capital and physical capital) were very limited and played a weak role in the company's growth. This points to a flaw in the organizational structure and the mechanisms for converting knowledge into added value. Conversely the company witnessed a significant improvement in intellectual capital efficiency during 2023 and 2024.

Table (6): Intellectual Capital Indicators for Modern Sewing Company

YEAR	CEE	HCE	SCE	VAIC
2020	0.052	0.18	-4.49	-4.25
2021	-0.038	-0.16	7.14	6.94
2022	-0.14	-0.56	2.77	2.06
2023	0.78	3.09	0.68	4.56
2024	0.48	1.72	0.42	2.63

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange.

1.3- Metal Industries Company:

Table (7) also reveals a clear fluctuation in the intellectual capital efficiency of the Metal Industries Company during the study period (2020–2024) The VAIC coefficient recorded a high level at the beginning of the period, followed by a sharp decline in 2021, before recovering in subsequent years. This fluctuation was primarily linked to significant changes in the efficiency of human and structural capital. Human capital was the most significant contributor to value creation in some years, while its efficiency declined in others.

Table (7): Intellectual Capital Indicators for the Metal Industries Company

YEAR	CEE	HCE	SCE	VAIC
2020	0.29	7.56	0.87	8.72
2021	0.052	0.18	-4.49	-4.25
2022	-0.0381	-0.16	7.14	6.94

2023	-0.14	-0.56	2.77	2.06
2024	0.78	3.09	0.68	4.56

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange.

1.4- The Iraqi Company for Engineering Works:

As the results in Table (8) reflect, there was a marked improvement in the intellectual capital efficiency of the Iraqi Company for Engineering Works during the study period (2020–2024), after recording very low levels at the beginning of the period. It is noted that this improvement peaked in 2023, as the VAIC coefficient increased significantly, driven mainly by the increased efficiency of human capital, which constituted the most significant component contributing to value creation compared to employed and structural capital. These results reflect a clear improvement in the company's ability to employ its human resources more efficiently, despite the continued limited contribution of employed capital in some years.

Table (8): Intellectual Capital Indicators for the Iraqi Company for Engineering Works

YEAR	CEE	HCE	SCE	VAIC
2020	0.002	0.02	-35.20	-35.17
2021	0.017	0.28	-2.48	-2.17
2022	0.085	1.62	0.38	2.09
2023	0.84	13.82	0.93	15.60
2024	0.17	1.08	0.08	1.35

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

1.5- The Iraqi Company for Carpets and Furnishings

The results in Table (9) provide a clear indication of the relative stability in the efficiency of the intellectual capital of the Iraqi Company for Carpets and Furnishings during the study period (2020–2024), with a noticeable improvement in 2024. It is noted that the VAIC coefficient maintained positive levels throughout the study period. This performance was mainly driven by the efficiency of human capital, which represented the main source of value creation compared to the capital employed and structural. The results indicate that the company's ability to maintain the efficiency of its investment in human resources contributed to supporting and enhancing the stability of intellectual capital at the end of the study period.

Table (9): Intellectual Capital Indicators for the Iraqi Carpet and Furniture Company

YEAR	CEE	HCE	SCE	VAIC
2020	0.18	4.09	0.76	5.03
2021	0.20	4.6	0.78	5.59
2022	0.20	4.37	0.77	5.35
2023	0.14	3.32	0.70	4.17
2024	0.32	7.42	0.87	8.62

1.6- Al-Kindi Veterinary Vaccines Company

The results in Table (10) reflect a relative stability in the intellectual capital efficiency of Al-Kindi Veterinary Vaccines Company during most of the study years with an exceptional jump in 2023. It is noted that this large increase in the VAIC coefficient was mainly driven by the increase in human capital efficiency along with a tangible improvement in the efficiency of capital used, while the contribution of structural capital remained relatively stable. The results indicate that the improvement in investment in human and material resources contributed directly to enhancing the efficiency of intellectual capital during that year.

Table (10): Intellectual Capital Indicators for Al-Kindi Company for Veterinary Vaccine Production

YEAR	CEE	HCE	SCE	VAIC
2020	0.11	1.46	0.32	1.90
2021	0.13	1.68	0.41	2.23
2022	0.12	1.70	0.41	2.24
2023	2.22	26.40	0.96	29.59
2024	0.11	1.34	0.26	1.73

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

1.7- Al Mansour Pharmaceuticals

Table (11) shows the fluctuation in the efficiency of intellectual capital for Al Mansour Pharmaceuticals during the study period (2020–2024). The VAIC coefficient recorded low levels in some years and reached a negative value in 2023 before improving again in 2024. It is noted that this fluctuation was mainly related to the volatility of human capital efficiency, which was the most influential component in value creation, while the contribution of employed capital remained limited. The results indicate that the instability in the efficiency of human resource investment was directly reflected in the trajectory of the company's intellectual capital.

Table (11): Intellectual Capital Indicators for Al Mansour Pharmaceutical Industries

YEAR	CEE	HCE	SCE	VAIC
2020	0.072	1.43	0.32	1.81
2021	-0.003	-0.38	3.57	3.18
2022	-0.014	-0.93	2.07	1.12
2023	0.015	0.52	-0.91	-0.38
2024	0.037	1.2	0.17	1.41

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

1.8- National Company for Home Furniture Industries

While the results in Table (12) show sharp fluctuations in the efficiency of the intellectual capital of the National Company for Home Furniture Industries during the study period (2020–2024), it is noted that the VAIC coefficient recorded very high levels in some years, which is met with a significant decline in other years, reflecting a clear instability in the company's ability to create added value. The results indicate that these fluctuations were mainly driven by significant changes in the efficiency of structural capital, while the contribution of human and employed capital remained limited or fluctuating, which was reflected in the instability of the company's intellectual capital efficiency.

Table (12): Intellectual Capital Indicators for the National Company for Home Furniture Industries

YEAR	CEE	HCE	SCE	VAIC
2020	-0.005	-0.15	7.65	7.49
2021	0.011	0.15	-5.31	-5.14
2022	-0.002	-0.025	40.29	40.26
2023	0.035	0.41	-1.39	-0.93
2024	0.032	0.69	-0.43	0.30

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

1.9- Baghdad Packaging Materials Manufacturing Company

On the other hand, the results of Table (13) show a gradual improvement in the efficiency of the intellectual capital of Baghdad Packaging Materials Manufacturing Company during the study period (2020–2024), especially in 2024. It is noted that this improvement was mainly driven by the increase in the efficiency of human capital, which represented the most contributing component to value creation compared to the capital used and structural. The results indicate that the improvement in the efficiency of human resource investment contributed directly to enhancing the VAIC coefficient at the end of the study period.

Table (13): Intellectual Capital Indicators for Baghdad Packaging Materials Manufacturing Company

YEAR	CEE	HCE	SCE	VAIC
2020	0.076	0.97	-0.02	1.03
2021	0.63	1.02	0.02	1.68
2022	0.039	1.02	0.03	1.09
2023	0.064	1.03	0.03	1.14
2024	3.13	0.58	2.39	0.15

1.10- Modern Construction Materials Manufacturing Company

The results in Table (14) reveal a clear weakness in the intellectual capital efficiency of the Modern Construction Materials Manufacturing Company during the study period (2020–2024). The VAIC coefficient recorded negative or uncalculated values in most years. This weakness is linked to a decline in the efficiency of human and employed capital, while the contribution of structural capital remained merely nominal and insufficient to support value creation. The results indicate the company's limited ability to efficiently utilize its available resources during the study period.

Table (14): Intellectual Capital Indicators for the Modern Construction Materials Manufacturing Company

YEAR	CEE	HCE	SCE	VAIC
2020	0.0009	0.36	-1.72	-1.35
2021	-0.001	-3.84	1.26	-2.59
2022	-0.0001	-	1.00	-
2023	-0.00013	-	1.00	-
2024	-1.0621	-	1.00	-

1.11- Al-Khazer Company for the Production and Trade of Modern Construction Materials

Table (15) shows fluctuations in the intellectual capital efficiency of Al-Khazer Company for the Production and Trade of Modern Construction Materials during the study period (2020–2024). The VAIC coefficient recorded negative values in some years, while showing relative improvement in others. This fluctuation was primarily driven by changes in the efficiency of human capital, which was the most influential component in value creation, while the contribution of employed and structural capital remained limited. The results indicate that the instability of human resource investment efficiency directly impacted the company's intellectual capital efficiency.

Table (15): Intellectual Capital Indicators for Al-Khazer Company for the Production and Trade of Modern Construction Materials

YEAR	CEE	HCE	SCE	VAIC
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2020	0.025	0.43	-1.29	-0.83
2021	-0.05	-0.79	2.25	1.40
2022	0.06	3.38	0.70	4.16
2023	0.006	0.47	-1.09	-0.61
2024	-0.0069	-0.46	3.13	2.65

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

2- Average Intellectual Capital Efficiency for All Companies

Table (16) illustrates the changes in the average VAIC (Intellectual Capital Efficiency) of all companies included in the study sample during the period (2020-2024). The average VAIC recorded negative values at the beginning of the period, then improved in subsequent years. This improvement is attributed to the rise in the average efficiency of human capital, which represents the most important component in value creation for companies, compared to the other two components: structural and physical. The results also indicate that the fluctuation in the average efficiency of structural capital limited the sustainability of the improvement in the average VAIC over the study period.

Table (16): Evolution of Average Intellectual Capital Indicators for All Companies by Year (2020–2024)

YEAR	Mean (CEE)	Mean (HCE)	Mean (SCE)	Mean(VAIC)
2020	0.09	1.72	-2.92	-1.10
2021	0.09	0.45	0.33	0.89
2022	0.06	1.69	5.54	7.29
2023	0.42	5.51	0.35	6.29
2024	0.23	2.60	0.66	3.51

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

Analysis of the average intellectual capital indicators for all companies in the study sample during the period (2020–2024) reflects a comprehensive picture of the actual efficiency of intellectual resource investment in the industrial sector. The general trends of the average VAIC coefficient show fluctuations over the years, indicating an instability in value creation efficiency at the sector level as a whole, despite some relative improvement in certain years due to the high performance of a limited number of companies. It is noteworthy that the average human capital efficiency (MEAN HCE) was the component contributing most to the average VAIC coefficient during the study period. This confirms that the added value in Iraqi industrial companies depends more heavily on the efficiency of human resources than on the employed or structural capital. In contrast, the average employed capital efficiency (MEAN CEE) remained at relatively low levels, reflecting the limited ability of companies to maximize the return on their physical and financial assets and investments.

3- Measuring financial performance

3.1- Baghdad Soft Drinks Company

The results below show a decline and instability in most indicators during 2021 and 2022, and an improvement during 2023 and 2024. Although this improvement stemmed from a decreasing increase or an increasing increase, overall, the annual evaluation series of indicators for Baghdad Soft Drinks Company reveals an instability in financial performance.

Table (17): Financial Performance Indicators of Baghdad Soft Drinks Company

YEAR	NPM	EPS	ROE	ROA
2020	0.150	0.34	0.14	0.13
2021	0.001	0.26	10.1	100.
2022	0.0007	70.2	10.1	100.
2023	40.001	0.50	0.18	60.1
2024	0.0018	0.74	0.24	0.21

3.2-Modern Sewing Company

The results below show an improvement in most of the financial performance indicators of the Modern Sewing Company, except for the net profit margin indicator, which appears to be low in percentages.

Table (18): Financial Performance Indicators for Modern Sewing Company

YEAR	NPM	EPS	ROE	ROA
2020	0.004	0.39	0.15	0.12
2021	0.010	0.33	0.19	0.16
2022	0.008	0.62	0.28	0.25
2023	0.007	0.63	0.28	0.22
2024	0.008	0.74	0.28	0.24

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

3.3- National Company for Metal Industries and Bicycles

The results below show an improvement in most of the financial performance indicators for the National Metal Industries and Bicycles Company for the years 2022 and 2023, except for the net profit margin indicator, where the improvement was only seen in 2020 and 2021.

Table (19): National Metal Industries and Bicycles Indicators

YEAR	NPM	EPS	ROE	ROA
2020	0.37	0.06	0.10	0.13
2021	0.19	0.04	0.07	0.11
2022	0.03	0.17	0.38	0.48
2023	0.04	0.18	0.66	0.36
2024	0.01	0.08	0.41	0.16

3.4- Iraqi Company for Engineering Works

The results below show that the Iraqi Engineering Works Company incurred losses across all financial performance indicators over the years.

Table (20): Financial Performance Indicators of the Iraqi Engineering Works Company

YEAR	NPM	EPS	ROE	ROA
2020	-0.010	-0.09	-0.13	-0.12
2021	-0.009	-0.23	-0.35	-0.34
2022	-0.006	-0.01	-0.01	-0.01
2023	-0.001	-0.06	-0.10	-0.10
2024	-0.0005	-0.02	-0.04	-0.04

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

3.5- Iraqi Carpet and Furniture Company

The results below show an improvement in most of the financial performance indicators for the Iraqi Carpet and Furnishings Company, except for the net profit margin indicator, which showed weak results.

Table (21): Indicators for the Iraqi Carpet and Furnishings Company

YEAR	NPM	EPS	ROE	ROA
2020	0.007	1.24	0.23	0.15
2021	0.007	1.49	0.27	0.20
2022	0.010	1.98	0.30	0.24
2023	0.007	1.40	0.20	0.15
2024	0.007	1.48	0.21	0.15

3.6- Al-Kindi Company for the Production of Vaccines and Veterinary Medicines

The results below show a decline and instability in most indicators during the evaluation period, reflecting a clear slowdown in the company's ability to generate profits.

Table (22): Financial Performance Indicators for Al-Kindi Company for the Production of Vaccines and Veterinary Medicines

YEAR	NPM	EPS	ROE	ROA
2020	0.000	0.003	0.027	0.003
2021	0.000	0.002	0.002	0.002
2022	0.001	0.023	0.019	0.018
2023	0.000	0.006	0.005	0.005
2024	0.000	0.004	0.003	0.003

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

3.7- Al Mansour Pharmaceutical Industries, Medical Supplies and Cosmetics Company

The results below show that Al Mansour Pharmaceutical Industries, Medical Supplies and Cosmetics Company incurred losses across all financial performance indicators over the years.

Table (23): Financial Performance Indicators of Al Mansour Pharmaceutical Industries, Medical Supplies and Cosmetics Company

YEAR	NPM	EPS	ROE	ROA
2020	-0.003	-0.04	-0.06	-0.05
2021	-0.119	-0.04	-0.04	-0.04
2022	0.00	-0.05	-0.05	-0.05
2023	0.000	0.002	0.002	0.002
2024	0.002	0.04	0.04	0.03

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

3.8- National Company for Home Furniture Manufacturing

The results indicate a recurring loss during the evaluation years. It is clear from the results below that the loss was achieved in all financial performance indicators of the National Company for Home Furniture Manufacturing during the years.

Table (24): Financial Performance Indicators of the National Company for Home Furniture Manufacturing

YEAR	NPM	EPS	ROE	ROA
2020	-0.010	-0.04	-0.03	-0.02

2021	-0.005	-0.13	-0.10	-0.08
2022	-0.014	-0.12	-0.11	-0.08
2023	-0.013	-0.17	-0.17	-0.11
2024	-0.004	-0.02	-0.02	-0.02

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

3.9- Baghdad Packaging Materials Manufacturing Company

The results below show that Baghdad Packaging Materials Manufacturing Company incurred losses in all financial performance indicators over the years.

Table (25): Financial Performance Indicators of Baghdad Packaging Materials Manufacturing Company

YEAR	NPM	EPS	ROE	ROA
2020	-0.0006	-0.006	-0.007	-0.006
2021	-0.0006	-0.008	-0.008	-0.008
2022	-0.0007	-0.009	-0.009	-0.005
2023	-0.005	0.000	0.000	0.000
2024	-0.0004	-0.004	-0.004	-0.004

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

3.10- Modern Construction Materials Manufacturing Company

The results indicate a recurring loss during the evaluation years. The results below clearly show that losses were incurred across all financial performance indicators for the Modern Construction Materials Manufacturing Company during those years.

Table (26): Financial Performance Indicators of Modern Construction Materials Manufacturing Company

YEAR	NPM	EPS	ROE	ROA
2020	-0.026	-0.003	-0.004	-0.004
2021	0.000	-0.003	-0.004	-0.002
2022	0.000	-0.002	-0.003	-0.002
2023	-0.044	-0.002	-0.002	-0.002
2024	-0.044	-0.001	-0.001	-0.000

3.11- Al-Khazer Road Company for the Production and Trade of Construction Materials

The results below show that Baghdad Packaging Materials Manufacturing Company incurred losses in all financial performance indicators over the years.

Table (27): Financial Performance Indicators of Al-Khazer Road Company for the Production and Trade of Construction Materials

YEAR	NPM	EPS	ROE	ROA
2020	0.003	0.10	0.06	0.04
2021	0.012	0.28	0.15	0.12
2022	0.003	0.05	0.03	0.02
2023	0.006	0.02	0.01	0.01
2024	-0.007	-0.02	-0.01	-0.01

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

4- Presentation of Market Capitalization Index Results for Each Company

Table (28) shows the market capitalization index for Baghdad Gas Drinks Company. It is evident that 2021 saw the highest market capitalization at (4.3), while 2022 had the lowest at (3.30). Modern Sewing Company had the highest market capitalization in 2024 at (9.1), while 2021 had the lowest at (5.3). National Company for Metal Industries and Bicycles achieved a market capitalization of (3.20) in 2022, the highest compared to the other years of evaluation, while the lowest was in 2021 at (2.32). Iraqi Company for Engineering Works achieved a market capitalization of (9) in 2024, the highest compared to the other years of evaluation, while the lowest was in 2020 at (0.82). Iraqi Company for Carpets and Furnishings achieved a market capitalization in 2024. (17.75) is the highest compared to the other years of evaluation, while the lowest market value was achieved in 2022, reaching (14.75). Al-Kindi Company for the Production of Vaccines and Veterinary Medicines achieved a market value in 2024 of (3.09), which is the highest compared to the other years of evaluation, while the lowest market value was achieved in 2020, reaching (1.37). Al-Mansour Company for Pharmaceutical Industries, Medical Supplies, and Cosmetics achieved a market value in 2021 of (2.84), which is the highest compared to the other years of evaluation, while the lowest market value was achieved in 2020, reaching (1.43). The National Company for the Manufacture of Home Furniture achieved a market value in 2023 of (2.95), which is the highest compared to the other years of evaluation, while the lowest market value was achieved in 2021, reaching (1.30). Baghdad Company for the Manufacture of Packaging Materials achieved a market value in 2023 of (5), which is the highest compared to the other years of evaluation, while the lowest market value was achieved in 2021. It was achieved in 2020, 2021 and 2022, as it reached (2). As for the Modern Construction Materials Industry Company, it achieved a market value in 2022 (1), while for three years no market value was achieved, while in 2023 it reached (0.59). As for the Al-Khazer Road Company for the Production and Trade of

Construction Materials, it achieved a market value in 2022 (1.95), while in 2024 no market value was achieved, which is the lowest market value. Figure (29) shows the indicators according to the years of evaluation of the company.

Table (29): Market Value Index of the Companies Under Study

sequence	Company	2020	2021	2022	2023	2024
1	Baghdad Soft Drinks	4.15	4.3	3.30	3.88	4.26
2	Modern Sewing Company	6.68	5.3	5.80	9.75	9.1
3	National Company for Metal Industries and Bicycles	2.57	2.32	3.20	2.35	2.4
4	Iraqi Company for Engineering Works	0.82	1.02	6.10	5.99	9
5	Iraqi Company for Carpets and Furnishings	10	15	14.75	15	17.75
6	Al-Kindi Company for the Production of Vaccines and Veterinary Medicines	1.37	1.56	1.40	1.60	3.09
7	Al-Mansour Company for Pharmaceutical Industries, Medical Supplies, and Cosmetics	1.43	2.84	1.53	1.79	2.48
8	National Company for Home Furniture Manufacturing	1.4	1.3	1.95	2.95	1.4
9	Baghdad Company for Packaging Materials Manufacturing	2	2	2	5	2.9
10	Modern Construction Materials Manufacturing	0	0	1	0.59	0
11	Al-Khazer Road Company for the Production and Trade of Construction Materials	1.11	1.9	1.95	1.60	0

Source: Prepared by researchers based on official publications of the Iraq Stock Exchange

5- Hypothesis testing

Correlation Hypothesis Testing:

5.1-First: There is a statistically significant positive correlation between intellectual capital and financial performance.

This leads to the following:

5.1.1- There is a statistically significant positive correlation between human capital and financial performance indicators.

The results of the correlation matrix presented in Table (30) show a statistically significant positive correlation between human capital and each of the following: return on assets ($r = 0.267$, $p < 0.05$), return on equity ($r = 0.269$, $p < 0.05$), and return on equity ($r = 0.290$, $p < 0.05$). However, no statistically significant correlation was found between human capital and net profit margin ($r = 0.196$, $p > 0.05$). These results partially support the hypothesis.

5.1.2- There is a statistically significant positive correlation between structural capital and financial performance indicators.

The correlation matrix results in Table (30) show a statistically significant positive correlation between structural capital and return on assets ($r = 0.289$, $p < 0.05$). In contrast, no statistically significant correlations were found between structural capital and return on equity ($r = 0.261$, $p > 0.05$), earnings per share ($r = 0.138$, $p > 0.05$), or net profit margin ($r = -0.038$, $p > 0.05$). Therefore, the hypothesis is partially supported.

5.1.3 There is a statistically significant positive correlation between physical capital and financial performance indicators.

The results of the correlation matrix in Table No. (30) show that there is no statistically significant positive correlation between physical capital and each of the following: return on assets ($r = 0.138$, $p > 0.05$), return on equity ($r = 0.215$, $p > 0.05$), earnings per share ($r = 0.048$, $p > 0.05$), and net profit margin ($r = 0.070$, $p > 0.05$). Accordingly, this hypothesis is not statistically supported.

5.2-Second: There is a statistically significant positive correlation between intellectual capital and market value.

The results of the correlation matrix presented in Table (30) show a statistically significant positive correlation between intellectual capital and market value ($r = 0.282$, $p < 0.05$). This result indicates a statistically significant positive correlation between intellectual capital and market value, and supports the hypothesis. This leads to the following:

5.2.1- There is a statistically significant positive correlation between human capital and market value.

The results of the correlation matrix presented in Table (30) show a statistically significant positive correlation between human capital and market value, as the result indicates a statistically significant positive correlation ($r = 0.316$, $p < 0.05$).

5.2.2 There is a statistically significant positive correlation between structural capital and market value.

The results of the correlation matrix presented in Table (30) show that there is no statistically significant positive correlation between structural capital and market value, as the correlation value was not statistically significant ($r = 0.129$, $p > 0.05$), thus rejecting this hypothesis.

5.2.3- There is a statistically significant positive correlation between physical capital and market value.

The results of the correlation matrix presented in Table (30) show that there is no statistically significant positive correlation between physical capital and market value, as the correlation value was not statistically significant ($r = 0.047$, $p > 0.05$), thus rejecting this hypothesis.

5.3-Third: There is a statistically significant positive correlation between financial performance and market value.

This leads to the following:

5.3.1- There is a statistically significant positive correlation between return on assets (ROA) and market value.

The results of the correlation matrix presented in Table (30) show a statistically significant positive correlation between ROA and market value, as the correlation coefficient was statistically significant ($r = 0.470$, $p < 0.01$), thus confirming this hypothesis.

5.3.2 There is a statistically significant positive correlation between return on equity (ROE) and market value.

The results of the correlation matrix presented in Table (30) show a statistically significant positive correlation between the return on equity (ROE) and market capitalization, as the correlation coefficient was statistically significant ($r = 0.471$, $p < 0.01$), thus confirming this hypothesis.

5.3.3 There is a statistically significant positive correlation between earnings per share (EPS) and market capitalization.

The results of the correlation matrix presented in Table (30) show a statistically significant positive correlation between the return per share (EPS) and market capitalization, as the correlation coefficient was statistically significant ($r = 0.883$, $p < 0.01$), thus confirming this hypothesis.

5.3.4- There is a statistically significant positive correlation between net profit margin (NPM) and market capitalization

The results of the correlation matrix shown in Table No. (30) show that there is no statistically significant positive correlation between net profit margin and market value, as the correlation value was not statistically significant ($r = 0.132$, $p > 0.05$) to be accepted, which means rejecting this hypothesis.

Table (30) Correlation Matrix between Study Variables

The variable	intellectual capital	human capital	physical capital	structural capital	return on assets	return on equity	earnings per share	net profit margin	Market capitalization
Intellectual capital	1								
Human capital	0.702**	1							
Physical capital	0.598**	0.831**	1						
Structural capital	0.777**	0.097	0.080	1					
Return on assets	0.371**	0.267*	0.138	0.289*	1				
Return on equity	0.357**	0.269*	0.215	0.261	0.945**	1			
Earnings per share	0.273*	0.290*	0.048	0.138	0.586**	0.591**	1		
The variable	0.093	0.196	0.070	-0.038	0.107	0.096	0.072	1	
Intellectual capital	0.282*	0.316*	0.047	0.129	0.470**	0.471**	0.883**	0.132	1

Impact Hypothesis Testing:

Impact hypotheses are tested in two ways: direct and indirect impact.

Direct Impact of Intellectual Capital on Financial Performance:

5.4-Fourth: There is a statistically significant positive direct impact of intellectual capital on financial performance.

This hypothesis leads to the following:

5.4.1- There is a statistically significant positive direct impact of human capital on financial performance.

The regression analysis results in Table (31) show a direct, positive, and statistically significant effect of human capital on some financial performance indicators. Human capital had a significant positive effect on the return on assets (ROA) ($B = 0.008$, $t = 2.02$, $p < 0.05$, $R^2 = 7\%$), as well as on the return on equity (ROE) ($B = 0.010$, $t = 2.03$, $p < 0.05$, $R^2 = 7\%$), in addition to the return on shares (EPS) ($B = 0.031$, $t = 2.30$, $p < 0.05$, $R^2 = 8\%$). In contrast, capital did not show a significant effect. Human capital has a statistically significant effect on net profit margin (NPM) ($B = 0.016$, $t = 1.45$, $p > 0.05$). Therefore, this hypothesis is partially supported.

5.4.2-There is a direct, statistically significant positive effect of structural capital on financial performance.

The regression analysis results presented in Table (31) show a direct, statistically significant positive effect of structural capital on some financial performance indicators. Structural capital had a significant positive effect on the return on assets (ROA) ($B = 0.007$, $t = 2.19$, $p < 0.05$, $R^2 = 8\%$), as well as on the return on equity (ROE) ($B = 0.08$, $t = 1.98$, $p < 0.05$, $R^2 = 7\%$).

In contrast, structural capital did not show a statistically significant effect on earnings per share (EPS) ($B = 0.012$, $t =$ Structural capital also did not show a statistically significant effect on net profit margin (NPM) ($B = 0.003$, $t = 0.277$, $p > 0.05$). Therefore, this hypothesis is partially supported.

5.4.3-There is a direct, statistically significant positive effect of physical capital on financial performance.

The regression analysis results in Table (31) show a direct, statistically significant positive effect of physical capital on some financial performance indicators. Physical capital had a positive but not statistically significant effect on return on assets (ROA) ($B = 0.051$, $t = 1.01$, $p > 0.05$), and the return on equity (ROE) was also not statistically significant ($B = 0.101$, $t = 1.60$, $p < 0.05$).

Conversely, physical capital did not show a statistically significant effect on earnings per share (EPS) ($B = 0.066$, $t = 0.726$, $p > 0.05$). Similarly, physical capital did not show a statistically significant effect on net profit margin (NPM) ($B = 0.073$, $t = 0.611$, $p > 0.05$). Therefore, this hypothesis is rejected.

Table (31) Results of the direct impact between intellectual capital and financial performance indicators

Dependent variable	Independent variable	B	T	p	R ²	The model
ROA	Intellectual capital	.007**	2.91	.005	14%	1
ROA	Human capital	.008*	2.02	.049	7%	2
ROA	Physical capital	.051	1.01	.314	2%	3
ROA	Structural capital	.007*	2.19	.033	8%	4
ROE	Intellectual capital	.008**	2.78	.008	13%	5
ROE	Human capital	.010*	2.03	.047	7%	6
ROE	Physical capital	.101	1.60	.114	5%	7
ROE	Structural capital	.008*	1.98	.050	7%	8
EPS	Intellectual capital	.020*	2.06	.044	7%	9
EPS	Human capital	.031*	2.30	.032	8%	10
EPS	Physical capital	.066	.355	.726	1%	11
EPS	Structural capital	.012	1.01	.314	2%	12
NPM	Intellectual capital	.005	.678	.501	1%	13
NPM	Human capital	.016	1.45	.151	3%	14
NPM	Physical capital	.073	.512	.611	1%	15
NPM	Structural capital	.003	.277	.783	1%	16

The Direct Impact of Intellectual Capital on Market Value:

5.5-Fifth: There is a statistically significant positive direct impact of intellectual capital on market value.

The regression analysis results in Table (32) show a statistically significant positive direct impact of intellectual capital on market value. Intellectual capital had a significant positive impact on market value ($B = 0.157$, $t = 2.14$, $p < 0.05$, $R^2 = 8\%$). Therefore, this hypothesis is accepted. This leads to:

5.5.1- There is a statistically significant positive direct impact of human capital on market value.

The regression analysis results in Table (32) show a statistically significant positive direct impact of human capital on market value. Human capital has a significant positive effect on market value ($B = 0.297$, $t = 2.42$, $p < 0.05$, $R^2 = 10\%$), therefore the hypothesis is accepted.

5.5.2- Structural capital has a statistically significant positive direct effect on market value.

The regression analysis results in Table (32) show that structural capital does not have a statistically significant positive direct effect on market value. While structural capital does have a positive effect, it is not statistically significant ($B = 0.100$, $t = 0.945$, $p > 0.05$), therefore the hypothesis is rejected.

5.5.3- Physical capital has a statistically significant positive direct effect on market value.

The regression analysis results in Table (32) show that physical capital does not have a statistically significant positive direct effect on market value. While physical capital had a positive effect, it was not statistically significant on market value ($B = 0.553$, $t = 0.341$, $p > 0.05$), therefore the hypothesis is rejected.

Table (32) Results of the direct impact between intellectual capital and market value

dependent variable	Independent variable	B	T	P	R ²	The model
MV	Intellectual capital	.157*	2.14	.037	8%	17
MV	Human capital	.297*	2.42	.019	10%	18
MV	Physical capital	.553	.341	.734	1%	19
MV	Structural capital	.100	.945	.349	2%	20

The Direct Impact of Financial Performance on Market Value:

5.6-Sixth: There is a statistically significant positive direct impact of financial performance on market value.

This includes:

5.6.1- There is a statistically significant positive direct impact of the return on assets (ROA) on market value.

The regression analysis results presented in Table (33) show a statistically significant positive direct effect of the return on assets (ROA) on market value. The ROA had a significant positive effect on market value (ROA) ($B = 14.9$, $t = 3.87$, $p < 0.01$, $R^2 = 22\%$), and therefore the hypothesis is accepted.

5.6.2- There is a statistically significant positive direct effect of the return on equity (ROE) on market value.

The regression analysis results presented in Table (33) show a statistically significant positive direct effect of the return on equity (ROE) on market value. (ROE) has a significant positive effect on market capitalization (ROE) ($B = 11.8$, $t = 3.89$, $p < 0.01$, $R^2 = 22\%$), and therefore the hypothesis is accepted.

5.6.3- There is a statistically significant positive direct effect of earnings per share (EPS) on market capitalization.

The regression analysis results in Table (33) show a statistically significant positive direct effect of earnings per share (EPS) on market capitalization. EPS has a significant positive effect on market capitalization (EPS) ($B = 7.69$, $t = 13.67$, $p < 0.01$, $R^2 = 77\%$), and therefore the hypothesis is accepted.

5.6.4- There is a statistically significant positive direct effect of net profit margin (NPM) on market capitalization.

The regression analysis results in Table (33) show no significant direct effect. A statistic for net profit margin (NPM) on market value. Net profit margin (NPM) has a positive effect, but it is not statistically significant on market value (NPM) ($B = 1.50$, $t = 0.969$, $p < 0.01$), and therefore the hypothesis is rejected.

Table (33) Results of the direct impact between financial performance indicators and market value

dependent variable	Independent variable	B	T	P	R ²	The model
MV	Return on assets	14.9**	3.87	.000	22%	21
MV	Return on equity	11.8**	3.89	.000	22%	22
MV	Earnings per share	7.69**	13.67	.000	77%	23
MV	Net profit margin	1.50	.969	.337	2%	24

Testing the Indirect Effect Hypotheses:**5.7-Seventh. There is a statistically significant positive indirect effect of intellectual capital on market value through financial performance.**

Sub-hypotheses of the indirect effect according to financial performance indicators:

5.7.1- There is a statistically significant positive indirect effect of intellectual capital on market value through the return on assets (ROA) as a mediating variable.

The results of the indirect effect test, presented in Table (34), show a statistically significant positive indirect effect of intellectual capital on market value through the return on assets (ROA) as a mediating variable. The indirect effect value was 0.087, and the confidence interval at the 95% level was between LLCI = 0.0264 and ULCI = 0.2699, neither of which includes zero, indicating statistical significance for the effect. Therefore, this hypothesis is statistically supported.

5.7.2- There is a statistically significant positive indirect effect of intellectual capital on market value through the return on equity (ROE) as a mediating variable.

The results of the indirect effect test, presented in Table (34), show a statistically significant positive indirect effect of intellectual capital on market value through the return on equity (ROE) as a mediating variable. The indirect effect value was 0.084, and the confidence interval at the 95% level was between LLCI = 0.0242 and ULCI = 0.2861, excluding zero, indicating the significance of this effect. Therefore, this hypothesis is statistically supported.

5.7.3- There is a statistically significant positive indirect effect of intellectual capital on market value through the return on equity (EPS) as a mediating variable.

The results of the indirect effect test, presented in Table (34), show a statistically significant positive indirect effect of intellectual capital on market value through earnings per share (EPS) as the mediating variable. The indirect effect value was 0.132, and the confidence interval at the 95% level was between LLCI = 0.0453 and ULCI = 0.6134, excluding zero, indicating the significance of this effect. Therefore, this hypothesis is statistically supported.

5.7.4- There is a statistically significant positive indirect effect of intellectual capital on market value through net profit margin (NPM) as the mediating variable.

The results of the indirect effect test, presented in Table (34), show no statistically significant indirect effect of intellectual capital on market value through net profit margin (NPM) as the mediating variable. The indirect effect value was 0.005, and the confidence interval at the 95% level was between LLCI = -0.011 and ULCI = 0.0293, an interval that includes zero, indicating the insignificance of this effect. Therefore, this hypothesis is not statistically supported.

Table (34) Results of the indirect effect

Hypothesis	independent variable	mediating variable	indirect effect	LLCI	ULCI	Significance	Result
1	Intellectual capital	Return on assets	.087*	.0264	.2699	Moral	Check
2	Intellectual capital	Return on equity	.084*	.0242	.2861	Moral	Check
3	Intellectual capital	Earnings per share	.132*	.0453	.6134	Moral	Check
4	Intellectual capital	Net profit margin	.005	-.011	.0293	Non-moral	Not checked

6-Conclusions

6.1-Strategic Shift in Resources: The study concluded that the modern economy has shifted from reliance on tangible assets to reliance on intangible assets. Intellectual capital is considered the primary driver of value creation for companies. Added value is no longer created solely from tangible assets (money, land, buildings, machinery, and equipment), but also through a company's ability to manage the knowledge residing in the minds of its employees (human capital) and its organizational structures (structural capital).

6.2 - The Role of the VAIC Model: The study concluded that the intellectual value added coefficient is the most logical tool for measuring the efficiency of intangible assets in publicly traded companies. This is due to its role in linking the company's actual

output (economic value added) with investment in knowledge and financial inputs. Furthermore, it relies on readily available and documented financial data and is easy to calculate.

6.3 - The Interrelationship of Intellectual Capital Components: The study concluded that the components of intellectual capital—human, material, and structural efficiency—do not operate in isolation but rather form an interconnected system, with each component influencing the others. Employees innovate, systems maintain and enhance this innovation, and financial assets provide the necessary environment. Any deficiency in one component leads to a decrease in the company's overall efficiency, weakening its competitiveness.

6.4- Lack of Investment in Structural Capital: It was observed that the Iraqi joint-stock companies included in the research sample did not invest in structural capital and neglected it. This is attributed to a gap between the efficiency of structural capital (systems, structures, technology) and human capital (knowledge and innovation). This indicates that knowledge remains confined to individuals and is not utilized within companies.

6.5- The Emergence of Human Capital: The results showed that the efficiency of human capital is the largest contributor among other components to increasing the added value of Iraqi companies. This demonstrates that intellectual skills and accumulated experience are the main factors of added value in joint-stock companies within the industrial sector.

7- Recommendations

7.1- Adopting Strategies that Support Knowledge and Innovation: Iraqi industrial companies must shift from the traditional management system to a knowledge-based system by allocating budgets for research and development and incentivizing creativity, viewing this as an investment rather than a cost incurred by the company.

7.2- Investing in Technology: To enhance the capacity of structural capital and its contribution to company growth, companies should leverage their information systems by focusing on quality management and comprehensive digital transformation. This ensures that individual skills are transformed into sustainable knowledge that remains even after employees leave their positions.

7.3 Investment in Invested Capital: It is essential to balance investment in technology with the use of available financial assets to ensure that underutilized resources do not negatively impact the High Value Investment in Capital (VAIC) indicator.

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