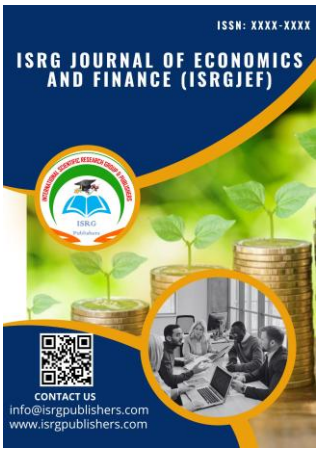
ISRG JOURNAL OF ECONOMICS AND FINANCE (ISRGJEF)

ISRG PUBLISHERS
Abbreviated Key Title: ISRG J Econ Fin.
ISSN: 3048-6998 (Online)
Journal homepage: https://isrgpublishers.com/isrgjef-2/
Volume – 2 Issue -1 (January- February) 2025
Frequency: Bimonthly



The impact of intellectual capital efficiency on the value of tourism companies listed in the Iraq Stock Exchange

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| **Received:** 02.02.2025 | **Accepted:** 06.02.2025 | **Published:** 11.02.2025

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Abstract

The research aims to measure the efficiency of intellectual capital in the tourism sector through the value added index of intellectual capital using the (VAIC) model developed by Pulic 1998 as one of the widely used models in evaluating how companies exploit their human resources and information and showing the impact of intellectual capital efficiency on the company's value expressed by the closing price of the share. The descriptive analytical approach was used to verify the research hypothesis. The research sample amounted to (9) tourism companies out of the tourism sector companies listed on the Iraq Stock Exchange, which number (10) companies according to the availability of their data on the market website. The study included (6) years for the period extending from 2018 to 2023. The research reached a set of conclusions, including that is Intellectual capital measurement is a complex process that involves the use of a combination of quantitative and qualitative methods to identify and value the intangible assets owned by an organization. there is no effect of the efficiency of intellectual capital on the market value of the shares of tourism companies listed on the Iraq Stock Exchange

Key Words: Intellectual capital, VAIC model, company value

Introduction:

In today's knowledge-based economies, financial reports that focus on accounting disclosure of financial assets have limited value for investors in making decisions and determining the market value of companies. The Institute of Chartered Accountants in England and Wales confirmed this deficiency in financial reports and their inability to provide the basic needs of investors, which was one of the reasons for the financial collapses in 2008. Therefore, companies began to develop their financial reports by disclosing intangible moral resources, believing that acquiring and managing these resources in an appropriate manner will contribute to creating a competitive advantage for the company and increasing its wealth, as economic units are witnessing a large wave in the diversity of their objectives as a result of the many changes that the world is witnessing, perhaps the most important of which is social change and the view of economic units of the human and intellectual factor that they possess.

Intellectual capital is one of the main factors that enable economic units to maintain their ability to survive by possessing individuals and minds that create a competitive advantage for the economic unit that makes it resilient in the world of knowledge and technology, as intellectual capital and its counterpart intangible intellectual assets are of great importance, and economic units have come to rely on possessing intellectual capital as well as their keenness to possess physical capital, and the keenness to possess intellectual capital may even increase in some areas where physical capital is not considered a major matter. Intellectual capital is one of the most important intangible assets in the modern business world, representing the values, knowledge and skills possessed by individuals within organizations. In the tourism sector, which is witnessing increasing competition, measuring the efficiency of intellectual capital becomes an essential element for evaluating companies' performance and measuring their value. Many tourism companies listed on the Iraq Stock Exchange are moving towards adopting strategies based on innovation and knowledge to increase their competitiveness and achieve sustainable growth. Therefore, measuring the efficiency of intellectual capital is an effective tool for understanding how to better exploit these resources and improve financial and operational results. The elements of intellectual capital include three main components: human capital, structural capital, and social capital. Tourism companies must assess the extent to which each of these elements affects overall performance, which facilitates making strategic decisions based on accurate data. Evaluating the financial performance of economic units is one of the important processes they carry out as one of the means of control to ensure that the desired goals are achieved. In light of the complexity and expansion of the activities of economic units and the increase in the intensity of competition, the importance of evaluating financial performance has increased so that the management of these units can learn about the results of their work and study them before thinking about setting future plans.

Through this study, how to measure the efficiency of intellectual capital in Iraqi tourism companies will be explored, and recommendations will be provided to improve overall performance by enhancing these valuable assets and then showing their reflection on the company's value by assuming that there is an impact of the efficiency of intellectual capital on the value of tourism companies listed on the Iraq Stock Exchange. Through this, the importance of the research can be framed by helping managements in tourism companies to know the importance of the role of "intangible" human assets and intellectual capital and its efficiency and its impact on the company's value. The study provides management with a guide to using the VAIC™ model as a powerful tool to evaluate the effective use of intellectual capital. Managements can use the model to evaluate the performance of their own organization without having to rely on industry standards.

Previous studies

Chen, M Ku (2005) "An Empirical Investigation of the Relationship between Intellectual Capital and Firms' Market Value and Financial Performance"

The purpose of this study is to empirically investigate the relationship between value creation efficiency, market valuation of firms, and financial performance. Using data from listed firms in Taiwan and the Value Added Intellectual Capital Coefficient (VAIC™) as a measure of capital employed efficiency and intellectual capital, the authors constructed regression models to examine the relationship between value creation efficiency of firms and market value-to-book value ratios of firms, and explore the relationship between intellectual capital and current and future financial performance of firms. The results support the hypothesis that intellectual capital of firms has a positive effect on market value and financial performance, and may be an indicator of future financial performance. In addition, the authors found that investors may place different values on the three components of value creation efficiency (physical capital, human capital, and structural capital).

Fijałkowska .Just(2016) " Value Added Intellectual Coefficient (VAIC™) as a Tool of Performance Measurement"

This study aims to study the development of the concept of measuring the performance of business organizations and to present one of the methods of evaluating the performance of enterprises (VAIC™), which, according to the definition of its author (Pulic), should meet the requirements of the new economy. This research focuses on shedding light on the characteristics of this method and its calculation algorithm. The research also attempts to evaluate the VAIC™ method and determine its validity and usefulness. A practical application was used to calculate the interpretation of (VAIC™) in Polish media sector companies covering the period 2007 to 2011. The study concluded that the value of companies today depends on more than just tangible assets. The success of companies is determined by the creation and management of intangible assets. Therefore, in the age of knowledge, it is necessary to expand the set of performance measurement tools with non-financial measurement methods, and VAIC™ represents an important proposal for these measures. It is certain that this method significantly expands the scope of analysis of corporate performance, includes a wider range of variables that must be taken into account, and in this way it can be accepted as an additional useful tool for evaluating business results.

Wudhikarn and other (2024) "Utilizing the value added intellectual capital (VAIC) to tourism-related industries in a tourism intensively dependent country"

This study investigates the performance of intangible assets or intellectual capital of tourism-related industries in a country that relies heavily on tourism. In this study, VAIC, which is a financial evaluation method and also the most widely used measurement method, is used as a way to measure the performance of intellectual capital in monetary terms. Moreover, to better understand the performance, standard efficiency levels are further applied to classify the performance levels of tourism companies.

The sample size of the study is 20 companies operating in tourism-related industries in the world's top travel destination, Thailand, and the company data was collected from 2012 to 2021, including 187 company-year observations. The use of VAIC can assess the intellectual capital performance of tourism companies and industries, and the standard efficiency levels support the unified interpretation of intellectual capital efficiency levels. The results obtained show the good performance of both human and structural capital of a tourism-dependent country, especially in the logistics industry that supports and is directly related to tourism attractions. Moreover, the findings also highlight the importance of human capital which plays a major contributor to the overall human capital performance in this tourism-dependent economy. This study contributes to the new exploration of human capital in high-impact industries especially in the most important tourism country. Moreover, the application of VAIC also emphasizes the practical application of management.

Theoretical Background

The Concept of Intellectual Capital

The concept of intellectual capital is a modern concept since it began in the sixties of the current century and began to be viewed as a true representative of the company's ability to compete and achieve success after it was a natural source represented in the real wealth of the company before this date, and the use of this concept has developed to represent the mental capabilities that the company possesses and that cannot be easily imitated by competing products (Al-Rubai'a, 2012). The concept of intellectual capital has caused an increase in the society's ability to bear costs by developing products and technologies that it produces, reducing their costs and in advanced, unexplored directions through the development of creativity. (Shaaban, 2011) The concept of intellectual capital is viewed as a purely economic concept that includes land, labor, capital or money, all of which are involved in the production process and the organization aims to achieve and maximize profits. Researchers in the field of administrative and social sciences were inspired by it to call the group of skills, experiences and knowledge accumulated by the individual the term (human capital), then it developed to include other elements and is called (intellectual capital), which in turn focuses on intellectual power as an asset of the intangible company, thus affecting the profit of the intangible company, affecting it just as the material assets in capital. (Majeed, 2019)

Thomas Stewart defined intellectual capital in his book entitled Intellectual Capital (The New Wealth of Organizations) as intellectual knowledge leadership, intellectual information, intellectual property, and features that can be put to use to create wealth. Stewart classified intellectual capital into three categories: structural capital, human capital, and customer capital. This renewal includes the basic components of intellectual capital, although many specialists have presented other components because they did not come out of these three important components of intellectual capital (Al-Hilali, 2011). It can be said that intellectual capital is a group of workers who possess mental capabilities, its elements (knowledge machine, skills, experiences and values) that can be employed and invested in increasing intellectual contributions, improving the performance of the company's operations, and developing its creativity needs in a way that achieves effective relationships with all parties dealing with it (Shaaban, 2011).

It has also been defined as the set of competencies and mental skills possessed by employees that contribute mainly to the development of creativity in production and performance processes, which enables them to produce new ideas and develop old ideas so that the company can expand its market share and maximize its strengths and put it in a position that facilitates the choice of the appropriate decision, which is the determining element for the success or failure of the business of any economic unit.. (Survilaitė, Tamošiūnienė & Satrevics, 2015)

Accordingly, intellectual capital is a real wealth and valuable knowledge that can be invested and operated effectively for the benefit of the company and is a source of strength in achieving the competitive advantage represented in the experiences, competencies and skills possessed by companies.

The importance of intellectual capital

Intellectual capital appears to be one of the most important sources of wealth and supporting power in companies. Due to scientific challenges and globalization, the importance of intangible assets has increased, constituting, thus, the largest proportion of the company's assets and advanced intellectual capabilities. One of the most important means of attaining competitive advantage that companies resort to is this.

The importance of intellectual capital to companies can be best represented by the following: (Jather, 2015)

1. Intellectual capital is now the most basic and competitive advantage in companies and since the real asset that enables the continuity and existence of companies is its intellectual value.
2. Intellectual capital is one of the most prominent indicators reflecting the intellectual development of administration, which is one of the important management accounting practices.
3. Formulates systems which offer creativity or innovation so as to improve the company's performance substantially, thereby creating a competitive advantage for the company.
4. Intellectual capital, one of the main issues that have to do with human resources, focuses on working individuals who have special skills and knowledge and the necessity to invest in them to increase their creative capacity and minimize costs.
5. Intellectual capital is a source of wealth generation, for the added value flows to the firm through the use of know-how.
6. Based on the above, it can be said that intellectual capital plays an important role in companies, as it is an important source of their success by enhancing their competitive advantage and increasing profits.

As for the importance of intellectual capital in the tourism sector, intellectual capital is a key factor in enhancing the tourism sector, as it contributes to developing innovation and improving the quality of services provided. It includes the knowledge, expertise, and skills possessed by individuals, which helps create unique and attractive tourism experiences. According to a recent study conducted by "Klaus Schwab" in the World Economic Forum Report for 2022, it indicates that investing in developing intellectual capital can increase the competitiveness of tourist destinations (Schwab, 2022). Another study published by "The Journal of Tourism Management" in 2023 found that companies that invest in training their employees and stimulating creativity are better able to adapt to changes in the tourism market (Baker & O'Neill, 2023). Therefore, intellectual capital is considered a

fundamental pillar for attracting tourists and achieving sustainable development in this sector.

Intellectual capital measurement models:

Many researchers have made attempts to measure intellectual capital by building models capable of measuring it to benefit in developing competitive advantages and maximizing the company's profits. These models shall be presented as follows:

A. The calculated intangible assets value model: This model was presented by (Lev, 1997). It begins with fixed asset profits in assessing how much return should be expected on intangible assets. These figures are then employed to determine the percent return on their investment on the intangible assets.
B. The market value model: This model was presented by (Stewart, 1997). The market value model compares the book value and the market value of the company, wherein the market value is considered as the right value that expresses the company's tangible and intangible assets. It is an easy-to-apply and accounting-acceptable model.
C. The economic value added model: This model was presented by (Stewart, 1997). It is based on the reconciliation of the proper profit earned by a company with the cost relating to the intangible assets of the firm. Changes in economic value added are considered an indicator of Whether it is a resource for the company or not.
D. Human Resources Accounting Cost Model: This model was presented by (Stewart, 1997). It is concerned with the consideration of costs associated with human resources and measures their hidden impact through which profits can be achieved. Intellectual capital is calculated according to this method by dividing the human resource contribution account by the benefited salary costs.
E. Knowledge Capital Revenue Model: This model was presented by (Malhotra, 2003). It focuses on calculating revenues on knowledge capital as a percentage of overall company revenues and on employment or capital revenues that is expected to be produced through an injustice done.
F. Intellectual Factor Model for the added value of intellectual capital: This model was presented by(Pulic in 2000), and it assumes evaluating the production of capital in relation to their smart capital; a measure of how effectively those capital or ... used. This builds of three foundation blocks: human capital, capital used, and storage capital.

Methods of measuring intellectual capital

There are a group of methods for measuring intellectual capital, including:

A. Direct measurement methods: -

1. Technological mediator scale: This method depends on the monetary value of intangible assets. According to this method, the evaluation is done individually or collectively. According to this scale, intellectual capital consists of human capital, market capital, property capital, and infrastructure capital (Zéghal, & Maaloul, 2010)
2. Patent citation scale: According to this method, the efforts of the establishment in developing the technology available to it are relied upon. This scale reflects the importance and impact of the technological innovations of the establishment in the industrial or research sector. (Hall & Trajtenberg, 2005)
3. Total value creation measure: This method depends on cash flows and their ability to affect the planned activities of the facility (Van den beg, 2003)
4. Value Explorer method: Value Explorer is a framework developed by KPMG to measure and manage intellectual capital within organizations. This approach aims to identify and analyze intangible assets that contribute to value creation within the organization. This method depends on estimating the value of intellectual property and depends on a set of intangible assets such as (gifts, skills, tacit knowledge, key processes, social value rules, technology and explicit knowledge (Andreessen, 2004)
5. Intellectual assets valuation method: This method depends on re-evaluating intellectual assets. This method helps in converting intellectual capital into measurable numbers, which makes it easier for companies to make strategic decisions about investing in innovation and technology.(Smith & Parr. 2000)

B. Market value methods

1. Market Value to Book Value: The Market Value to Book Value (M/B Ratio) is one of the most important financial indicators used to measure a company's value and determine the extent to which it benefits from intellectual capital and intangible assets. (Lev: 2001)
2. Tobin's Q: It is an indicator used to evaluate companies by comparing their market value to the cost of replacing their assets. It is widely used to measure the impact of intellectual capital and intangible assets on the company's value. This measure is based on the result of dividing the market value by the book value. If the result is zero or greater, it means that there is value for intellectual capital (Ramzan, & Akbar: 2023)
3. The financial method for measuring intangible assets: This method is based on the difference between market value and book value and is useful in making decisions and dividing intellectual capital into (human, structural, customers) (Pastor, Glova: 2017)

C. Scorecard methods: This method depends on a set of models, which are:

1. Balanced Scorecard: This type focuses on achieving financial goals and reviews the performance of those goals. Accordingly, it displays the results to four parties: customers, internal trade operations, education, and financial growth. This tool helps determine how intellectual capital affects the strategic performance of the organization (Kaplan & Norton, 1996:)

2. Scandia Explorer: This measure is considered one of the most famous methods for measuring intellectual capital. This measure depends on the market value of the establishment and is the added value of the book value of the establishment (Edvinsson, 1997))
3. Intangible assets monitoring measure According to this measure, the true value of the establishment comes from its intangible assets and does not depend on the three assets only (Sveiby: 1997)
4. Knowledge assets method This method depends on providing frameworks that help expand the knowledge statement of the establishment, whether internal or external, and works to distinguish between important areas of knowledge, whether internal or external

D. The method of present value of discounted future revenues:

This method is based on economic value and depends on the present value of future revenues expected to be obtained. This method is used to measure human capital and according to this method, human capital will be obtained.

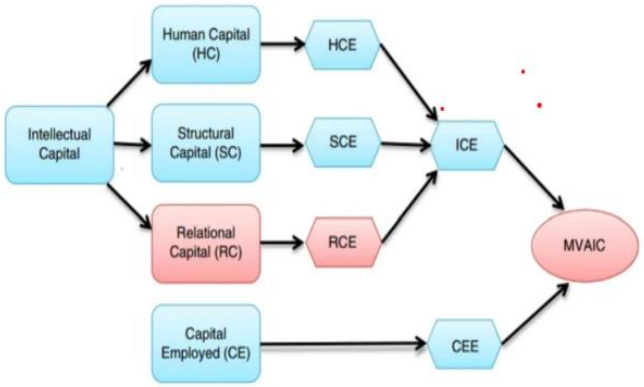
E. Intellectual Value Added Method:

The Value Added Intellectual Coefficient (VAIC™) method was developed by Alen Polek (Professor at the University of Zagreb and Graz, Austrian founder of the Intellectual Capital Research Center) to measure the effectiveness of the main resources of the enterprise. [Polek 2000] assumes that traditional accounting is based on cost control, while today it is necessary for companies to focus on value creation and value management. Focus on long-term growth.

In order to manage value, we must first measure it. Traditional indicators of business success, such as revenue growth, cash flow, profits, market share, and market leadership, do not provide information about whether the company is actually creating value for owners and shareholders. The ability to create value for the company has become a new criterion of success, and the main area of corporate investments is intellectual resources.

The tangible effects of the value creation process (profit, increase in share price) depend on the intangible forms of value creation (improving customer relations, increasing the speed and efficiency of communication, the ability to create and maintain a good reputation, investment in human resources). (2016, Fijałkowska)

The VAIC™ index is a performance measure that can meet the requirements of the modern economy and measure the effectiveness of key resources in business organizations. It is based primarily on the concept of added value as a measure of performance, relative to intellectual capital, and consists of the sum of three component ratios, namely human capital efficiency (HCE), structural capital efficiency (SCE), which includes both internal and relational capital efficiency, and capital efficiency employed (CEE), which includes physical and financial capital efficiency. HCE and SCE form intellectual capital efficiency (ICE). Figure (1) illustrates the components of this model.



e formulation of MVAIC™. *Source*: Ulum et al. (2014: 110)

In order to arrive at the final measurement, the VAIC™ model involves calculating several variables and coefficients, and includes seven steps shown in the table below (Laing et al. 2010)

Table (1) Steps for calculating the VAIC™ index value

Steps	Variable	Formula	Variables operationalized
1	Value added (VA)	VA = OP + EC + D + A	OP = operating profit
2	Human capital efficiency (HCE)	HCE = VA / HC	EC = Employee Costs
3	Structural capital (SC)	SC =VA- HC	D = Depreciation
	Structural capital efficiency (SCE)	SCE = SC / VA	A = Amortization
4	Intellectual capital(IC)	IC =HC + SC	HC = Human Capital (Employee costs: alaries and wages)
5	Intellectual capital efficiency (ICE)	ICE= HCE + SCE	TA=Total assets IA=Intangible assets
6	Capital employed (SE)	SE= TA-IA	
	Capital employed efficiency(CEE)	SEE =VA/ CE	
7	Intellectual capital value added(VAIC)	VAIC = ICE + CEE	

Source: Prepared by the researcher

The most important challenges facing intellectual capital in the tourism sector

DOI: 10.5281/zenodo.14848488

The development of intellectual capital in the tourism sector faces several challenges: (Maher, Eid, Ghabagbi, 2021):

a. Lack of training and qualification: Many tourism institutions do not provide effective training programs, which negatively affects the development of skills and knowledge among employees. This lack of training can lead to poor institutional performance and the quality of services provided.
b. Changing technology: Innovation in tourism requires the use of new technologies, and there may be resistance to change by some workers in the sector, and adapting to these technological changes is a major challenge.
c. Lack of awareness of the importance of intellectual capital: Some tourism companies may not realize the value of investing in intellectual capital, which leads to neglecting its development. This low awareness may hinder the competitiveness of the sector.
d. Global competition: Competition is increasing between tourist destinations, making it difficult for companies to stand out and develop their unique capabilities, which requires innovative and effective strategies.
e. Market changes: Constant changes in tourist preferences and market conditions require a quick and effective response, which can be a challenge for existing human resources.
f. Financing: SMEs may struggle to secure the financing needed to invest in developing intellectual capital, limiting their ability to innovate and grow.

Addressing these challenges requires thoughtful strategies to enhance education and training, embrace innovation, and raise awareness of the importance of intellectual capital in achieving success and sustainability in the tourism sector.

Components of Intellectual Capital:
Intellectual capital is one of the most important intangible assets that contribute to achieving competitive advantage and increasing the market value of companies. Many researchers have presented different models for the components of intellectual capital, as the classification of these components varies according to the methodology and research field used in the study.Table(2) shows models of intellectual capital components

Table (2) Models of intellectual capital components

Model	Components	Researcher's Point of View
Edvinsson & Malone (1997)	Structural Capital	Includes the internal systems, processes, patents, and databases that support an organization's performance.
	Human Capital	Includes the knowledge, skills and experience that employees possess.
Stewart (1997) Bontis (1998)	Human Capital	. Represents individual employees' abilities, skills and creativity.
	Structural Capital	Includes the organization's infrastructure, such as intellectual property rights and regulatory systems.
	Relational Capital	Includes relationships with customers, suppliers, partners, and the community at large.
Pulic (2000)	HCE - Human Capital Efficiency	The extent to which employees contribute to value creation.
	SCE - Structural Capital Efficiency	The extent to which the institution's infrastructure supports effective performance
	CEE - Capital Employed Efficiency	Efficient use of financial and material resources to achieve profits
Sveiby (1997)	Human Competence	Includes knowledge and skills of individuals
	Internal Structure	Includes databases, systems, and patents
	External Structure	Includes relationships with customers and business partners.

Source: Prepared by the researchers

(Edvinsson & Malone)assert that human capital cannot be owned by the company, but is invested in the individuals who work within it, while structural capital is considered the property of the organization and can be used even when employees leave. Stewart emphasizes that the true value of the organization stems from how these three components interact together to generate a sustainable competitive advantage. Bontis (1998) agrees with Stewart (1997) in classifying intellectual capital into three components, but adds that these components are not independent but interact with each other and indicates that relational capital can be the most influential element in companies that rely on customer satisfaction as a primary source of value.(Pulic)has presented a quantitative model for measuring intellectual capital through value added, focusing on converting intellectual capital into measurable financial indicators, allowing companies to evaluate the effectiveness of their investment in intangible assets.(Sveiby)asserts that achieving sustainable growth depends on the ability to convert knowledge into added value through internal infrastructure and external relationships.

Although researchers have different classifications of intellectual capital, they all agree on its importance in achieving sustainable growth and increasing the market value of companies. While some models focus on the administrative and organizational dimension of intellectual capital, other models, such as the Pulic model, tend to provide quantitative tools to measure and analyze it financially. Therefore, choosing the most appropriate model depends on the nature of the organization and its strategic objectives.

The relationship between intellectual capital and company value

The efficiency of intellectual capital depends on the ability of the company to convert these intangible assets into tangible economic value, which is reflected in the financial performance and market value of the company (Pulic, 2000).) The impact of intellectual capital efficiency on company value is as follows:

1. Improving financial performance and increasing profits: Many studies indicate that companies with high efficiency in managing intellectual capital achieve higher levels of profitability, return on assets (ROA) and return on equity (ROE). Ghosh & Mondal (2009) showed that Indian companies with high intellectual capital achieve superior financial performance compared to their peers.
2. Enhancing the market value of the company: Intellectual capital is closely related to the market value of the company, as investments in intangible assets lead to increased investor confidence and higher stock prices. According to Chen, Cheng, & Hwang (2005), companies with high intellectual capital efficiency achieve higher market valuations due to their ability to innovate and grow sustainably. Studies indicate that companies with higher VAIC have higher market value due to their ability to achieve high financial performance by efficiently exploiting their intangible resources (Firer & Williams, 2003).
3. Reducing the risk of bankruptcy and increasing sustainability: Intellectual capital helps companies adapt to changes in the business environment and reduce the risk of financial distress. (Zeghal & Maaloul , 2010) showed that companies that invest in intellectual capital are more resilient to economic crises, which is positively reflected in their market value and long-term sustainability.

Many researchers have focused on studying the impact of intellectual capital efficiency on company performance and value. The study conducted by (Chen, M Ku ,2005) explored the relationship between intellectual capital and the current and future financial performance of companies. The intellectual capital of companies has a positive impact on market value and financial performance, and may be an indicator of future financial performance. The study of (Fijałkowska. Justyna , 2016) found that the value of companies today depends on more than just physical assets. The success of companies is determined by the creation and management of intangible assets. Therefore, in the age of knowledge, it is necessary to expand the toolkit of performance measures with non-financial measurement methods, and in the study of (Acuna et.al, 2019) The results showed that the value added factor of intellectual capital (VAICTM) is an influential factor in the financial performance of companies, and to a greater extent, in family businesses (FB) compared to non-family businesses (NFB). It was also concluded that the efficiency of intellectual capital in family businesses has a direct relationship with the value added of production (VAEmp), and to a large extent compared to non-family businesses, as an important factor in predicting the performance of companies. The researcher is of the opinion that the findings justify putting forward an argument as to how much paramount it is to manage the intangible factors in companies to develop a competitive advantage factor, particularly with respect to intellectual capital. The research by Saymeh, et. al (2021) exhibited the presence of a significant positive effect of intellectual capital on the performance of Jordanian banks listed on the Amman Stock Exchange indicated by return on assets, yet the research suggested that intellectual capital did not exert significant influence on the returns on assets of those banks.

(Rusmawan & Ruhadi ,2023) seek to determine the impact of intellectual capital and corporate social responsibility as a moderating variable on the financial performance of Islamic banks. Using Islamic banks' reports for the years 2010-2021. The results showed that intellectual capital measured by intellectual capital has a positive but not significant impact, SCE has a positive and significant impact, and CEE has a negative and significant impact on the financial performance of companies. CSR as a moderating variable weakens the relationship between intellectual capital, SCE, and financial performance negatively, while CSR strengthens the relationship positively between CEE and financial performance. Figure (1) shows the relationship between intellectual capital and company value.

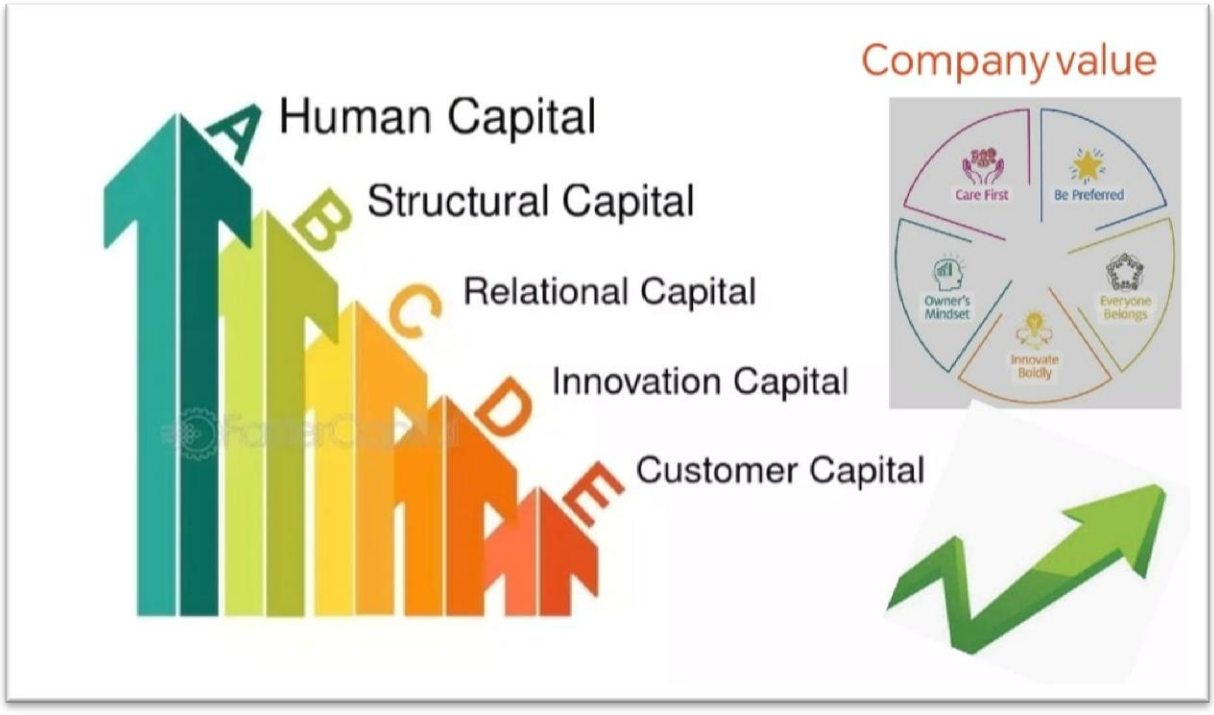


Figure (1) The relationship between intellectual capital and company value

Source: Prepared by the researchers

Measuring the efficiency of intellectual capital and its impact on the value of shares of the research sample companies

The research adopted the descriptive analytical approach. The research adopted the descriptive method in describing the reality of intellectual capital in the tourism sector companies listed on the Iraq Stock Exchange. The research also adopted the analytical method in testing its hypotheses.

The research community consisted of tourism sector companies listed on the Iraq Stock Exchange, numbering (10) companies. The research sample consisted of (9) companies according to the availability of their data for the year 2023 on the website of the Iraq Stock Exchange, as the Palestine Hotel Company was excluded for the lack of its data for the research period. Table No. (1) shows a summary of this sample:

Table (1) Tourism companies research sample

.	Company Name	Date of Establishment	Capital
1	Ashur Hotel	1989	376368526
2	Baghdad Hotel	1965	4000000000
3	Babylon Hotel	1982	2000000000
4	Ishtar Hotel	1982	7000000000
5	Rehab Karbala	1953	7500000000
6	Al Mansour Hotel	1980	2923200000
7	National Tourism Investments and Projects	1978	6253175025
8	Al Sadeer Hotel	1982	1734600000
9	Tourist Village of Mosul Dam	1986	240000000

To measure the independent variable, which represents the measurement of the added value of intellectual capital, the Pulic 1989 model was used, which was used by many researchers, and the model variables were measured according to the following steps:

1. Calculating the company's ability to employ its resources to achieve added value, and it is calculated as the difference between inputs and outputs. Outputs are expressed as the total revenues resulting from the sale of goods and services, and inputs represent all expenses except salaries, wages, incentives, or financial and in-kind benefits for employees.
2. Estimating the value added coefficient of human capital, known as the human capital efficiency coefficient, as this coefficient shows the relationship between the added value achieved by the company and human capital by measuring the amount of the amounts invested in human resources as an added value to the company. Human capital is measured by the total value of salaries, wages, bonuses, incentives and training plans, as these values express as parameters of the human element employment, acquisition and training and are viewed as a capital investment and not a revenue expense. This coefficient is calculated by dividing the added value by human capital.
3. Estimating the structural capital value added coefficient, or what is known as the structural capital efficiency coefficient, and this coefficient shows the relationship between the total value added and the structural capital or the amount of value added by the structural capital to the company. The structural capital is calculated by the difference between the value added and the human capital, and this coefficient is calculated by dividing the structural capital by the total value added of the company.

Table (2) Efficiency of human capital Efficiency and structural capital Efficiency, of the research sample companies

Company Name	Years	Value Added (1)	Human Capital (Employee Costs (2)	Human Capital Efficiency 1\2	Structural Capital 3=(1-2)	Structural Capital Efficiency 4= 3\1
Ashur Hotel	2018	(16405097)	39631000	-0.413946078	-56036097	3.415773585
	2019	(50034100)	25162700	-1.988423341	-75196800	1.502911015
	2020	(20500000)	20138700	-1.017940582	-40638700	1.98237561
	2021	9965000	18760000	0.531183369	-8795000	-0.882589062
	2022	18795000	23971000	0.784072421	-5176000	-0.275392392
	2023	13044871	27458750	0.475071553	-14413879	-1.104946074
Baghdad Hotel	2018	2192532260	104857317	20.90967348	2087674943	0.952175246
	2019	2403575188	107265241	22.40777316	2296309947	0.955372629
	2020	959407635	106035406	9.047993224	853372229	0.889478255
	2021	2206893235	919241660	2.400775912	1287651575	0.583467997

	2022	2170011819	100530598	21.58558551	2069481221	0.953672788
	2023	703804525	378412170	1.859888716	325392355	0.462333423
Babylon Hotel	2018	3269365230	241287520	13.54966569	3028077710	0.926197441
	2019	3677199506	268121360	13.71468318	3409078146	0.927085447
	2020	1887201005	281070280	6.71433851	1606130725	0.851065001
	2021	4551895527	283072780	16.08030107	4268822747	0.93781211
	2022	2888966402	354195240	8.156423565	2534771162	0.877397245
	2023	6393721823	378030170	16.91325807	6015691653	0.940874786
Ishtar Hotel	2018	6903025299	3807447037	1.813032521	3095578262	0.448437914
	2019	4104727822	3599143905	1.140473382	505583917	0.123171119
	2020	1095033951	2657342484	0.412078593	-1562308533	-1.426721547
	2021	322665487	2325752108	0.138735975	-2003086621	-6.207935778
	2022	2301989202	2291828139	1.004433606	10161063	0.004414036
	2023	6092166887	1337018160	4.556532641	4755148727	0.780534876
Rehab Karbala	2018	(36322310)	56636765	-0.641320351	-92959075	2.559283124
	2019	(25129770)	57631140	-0.436044992	-82760910	3.293341324
	2020	(24469250)	33404240	-0.732519285	-57873490	2.365151772
	2021	(24956750)	45988740	-0.54267088	-70945490	2.842737536
	2022	(26969834)	44003720	-0.612898955	-70973554	2.631590317
	2023	(23149780)	37841270	-0.611760123	-60991050	2.634627629
Al Mansour Hotel	2018	3904859438	2782762393	1.403231353	1122097045	0.287359139
	2019	3779810288	2519914809	1.499975426	1259895479	0.333322411
	2020	1324008870	2031830500	0.651633525	-707821630	-0.5346049
	2021	2236694262	2314145854	0.96653124	-77451592	-0.034627706
	2022	3863979337	2418321948	1.597793602	1445657389	0.374136936
	2023	8223096889	409240000	20.09358051	7813856889	0.950232862
National Tourism Investments and Projects	2018	1600121387	333060314	4.804299161	1267061073	0.791853095
	2019	1981934862	416968959	4.753195218	1564965903	0.789615205
	2020	2390070555	394828703	6.053436685	1995241852	0.834804583
	2021	2698482550	470031907	5.741062489	2228450643	0.825816214
	2022	2247607716	487528306	4.610209681	1760079410	0.783090126
	2023	4447309831	382858200	11.61607569	4064451631	0.913912407
Al Sadeer Hotel	2018	(55406550)	72417000	-0.765104188	-127823550	2.307011536
	2019	(113073250)	107479000	-1.052049703	-220552250	1.950525434
	2020	(145662200)	196638000	-0.74076323	-342300200	2.349959015
	2021	(57425000)	158653000	-0.361953446	-216078000	3.762786243
	2022	(46316233)	542880000	-0.085315784	-589196233	12.72116048
	2023	(10149013)	693930668	-0.014625399	-704079681	69.3742023
Tourist	2018	66738170	225486761	0.295973784	-158748591	-2.378677614

Village of Mosul Dam	2019	(302971939)	227901166	-1.329400566	-530873105	1.752218726
	2020	(27606555)	149809119	-0.184278201	-177415674	6.426577818
	2021	(86801023)	142902485	-0.607414371	-229703508	2.64632259
	2022	(93767186)	131252162	-0.714404887	-225019348	2.39976646
	2023	(64459581)	887138350	-0.072660122	-951597931	14.76270736

Estimating the added value coefficient of physical capital, or what is known as the capital efficiency coefficient used. This coefficient explains the relationship between added value and physical capital, or the amount of contribution of physical capital in achieving added value for the company. This coefficient provides a more comprehensive picture of the added value generated from all the company's resources and is measured by dividing the added value by physical capital. Physical capital is measured by the difference between the total tangible and intangible assets.

Table (3) Efficiency of Employed Capital, of the research sample companies

Company Name	Years	Value Added (1)	Physical Capital (2)	Efficiency of Employed Capital 1\2
Ashur Hotel	2018	(16405097)	183925707	-0.089194149
	2019	(50034100)	166307092	-0.300853676
	2020	(20500000)	166307092	-0.12326594
	2021	9965000	179941242	0.055379189
	2022	18795000	177592392	0.105832236
	2023	13044871	360144913	0.036221172
Baghdad Hotel	2018	2192532260	9071228605	0.241701798
	2019	2403575188	9691253715	0.248014886
	2020	959407635	9516061955	0.100819818
	2021	2206893235	9716091333	0.227137967
	2022	2170011819	10729954288	0.202238683
	2023	703804525	10845731672	0.064892305
Babylon Hotel	2018	3269365230	11625769494	0.281217104
	2019	3677199506	14381965124	0.255681298
	2020	1887201005	16447727818	0.114739314
	2021	4551895527	15598508819	0.291816069
	2022	2888966402	19102768733	0.151232863
	2023	6393721823	17640665423	0.362442213
Ishtar Hotel	2018	6903025299	41101398497	0.167951105
	2019	4104727822	42082265644	0.097540562
	2020	1095033951	41764468043	0.026219272
	2021	322665487	40875483588	0.007893863
	2022	2301989202	40853058758	0.056348026
	2023	6092166887	40853058758	0.149123886
Rehab Karbala	2018	(36322310)	8231681771	-0.004412502
	2019	(25129770)	8220764730	-0.003056865
	2020	(24469250)	8237406054	-0.002970504
	2021	(24956750)	8246788964	-0.003026238
	2022	(26969834)	8237132052	-0.003274178

	2023	(23149780)	8230154940	-0.0028128
Al Mansour Hotel	2018	3904859438	5026439194	0.776863956
	2019	3779810288	5532169529	0.683241948
	2020	1324008870	4761569596	0.278061434
	2021	2236694262	4358052862	0.513232476
	2022	3863979337	5555707108	0.695497308
	2023	8223096889	1385446220	5.93534182
National Tourism Investments and Projects	2018	1600121387	15091574469	0.106027465
	2019	1981934862	14381965124	0.137806958
	2020	2390070555	16447727818	0.145313114
	2021	2698482550	18477723234	0.146039775
	2022	2247607716	17248107348	0.130310397
	2023	4447309831	17367414138	0.256072078
Al Sadeer Hotel	2018	(55406550)	1587437330	-0.034903142
	2019	(113073250)	1594698664	-0.070905716
	2020	(145662200)	1942091923	-0.075002732
	2021	(57425000)	1475515970	-0.038918589
	2022	(46316233)	1299741513	-0.035634957
	2023	(10149013)	1312338814	-0.007733531
Tourist Village of Mosul Dam	2018	66738170	1243006998	0.053690904
	2019	(302971939)	1223623756	-0.247602204
	2020	(27606555)	1199290516	-0.023019072
	2021	(86801023)	1179771487	-0.073574437
	2022	(93767186)	1181158898	-0.079385751
	2023	(64459581)	1173447879	-0.05493178

Calculating the added value coefficient of intellectual capital, as this coefficient measures the amount of added value generated as a result of investing one unit in all sources of the company's intellectual capital (human, structural and material), and is calculated by adding the added value coefficient of human, structural and material capital.

Table (4) Added value of intellectual capital of the research sample companies

Company Name	السنوات	Human Capital Efficiency 1	Structural Capital Efficiency 2	Intellectual capital efficiency 3=1+2	Efficiency of employed capital 4	Added value of intellectual capital 5=3+4
Ashur Hotel	2018	-0.413946078	3.415773585	3.001827507	-0.089194149	2.912633358
	2019	-1.988423341	1.502911015	-0.485512326	-0.300853676	-0.786366002
	2020	-1.017940582	1.98237561	0.964435028	-0.12326594	0.841169088
	2021	0.531183369	-0.882589062	-0.351405693	0.055379189	-0.296026504
	2022	0.784072421	-0.275392392	0.508680029	0.105832236	0.614512265
	2023	0.475071553	-1.104946074	-0.629874521	0.036221172	-0.593653349
Baghdad Hotel	2018	20.90967348	0.952175246	21.86184873	0.241701798	22.10355052
	2019	22.40777316	0.955372629	23.36314579	0.248014886	23.61116068
	2020	9.047993224	0.889478255	9.937471479	0.100819818	10.0382913

	2021	2.400775912	0.583467997	2.984243909	0.227137967	3.211381876
	2022	21.58558551	0.953672788	22.5392583	0.202238683	22.74149698
	2023	1.859888716	0.462333423	2.322222139	0.064892305	2.387114444
Babylon Hotel	2018	13.54966569	0.926197441	14.47586313	0.281217104	14.75708024
	2019	13.71468318	0.927085447	14.64176863	0.255681298	14.89744993
	2020	6.71433851	0.851065001	7.565403511	0.114739314	7.680142825
	2021	16.08030107	0.93781211	17.01811318	0.291816069	17.30992925
	2022	8.156423565	0.877397245	9.03382081	0.151232863	9.185053673
	2023	16.91325807	0.940874786	17.85413286	0.362442213	18.21657507
Ishtar Hotel	2018	1.813032521	0.448437914	2.261470435	0.167951105	2.42942154
	2019	1.140473382	0.123171119	1.263644501	0.097540562	1.361185063
	2020	0.412078593	-1.426721547	-1.014642954	0.026219272	-0.988423682
	2021	0.138735975	-6.207935778	-6.069199803	0.007893863	-6.06130594
	2022	1.004433606	0.004414036	1.008847642	0.056348026	1.065195668
	2023	4.556532641	0.780534876	5.337067517	0.149123886	5.486191403
Rehab Karbala	2018	-0.641320351	2.559283124	1.917962773	-0.004412502	1.913550271
	2019	-0.436044992	3.293341324	2.857296332	-0.003056865	2.854239467
	2020	-0.732519285	2.365151772	1.632632487	-0.002970504	1.629661983
	2021	-0.54267088	2.842737536	2.300066656	-0.003026238	2.297040418
	2022	-0.612898955	2.631590317	2.018691362	-0.003274178	2.015417184
	2023	-0.611760123	2.634627629	2.022867506	-0.0028128	2.020054706
Al Mansour Hotel	2018	1.403231353	0.287359139	1.690590492	0.776863956	2.467454448
	2019	1.499975426	0.333322411	1.833297837	0.683241948	2.516539785
	2020	0.651633525	-0.5346049	0.117028625	0.278061434	0.395090059
	2021	0.96653124	-0.034627706	0.931903534	0.513232476	1.44513601
	2022	1.597793602	0.374136936	1.971930538	0.695497308	2.667427846
	2023	20.09358051	0.950232862	21.04381337	5.93534182	26.97915519
National Tourism Investments and Projects	2018	4.804299161	0.791853095	5.596152256	0.106027465	5.702179721
	2019	4.753195218	0.789615205	5.542810423	0.137806958	5.680617381
	2020	6.053436685	0.834804583	6.888241268	0.145313114	7.033554382
	2021	5.741062489	0.825816214	6.566878703	0.146039775	6.712918478
	2022	4.610209681	0.783090126	5.393299807	0.130310397	5.523610204
	2023	11.61607569	0.913912407	12.5299881	0.256072078	12.78606018
Al Sadeer Hotel	2018	-0.765104188	2.307011536	1.541907348	-0.034903142	1.507004206
	2019	-1.052049703	1.950525434	0.898475731	-0.070905716	0.827570015
	2020	-0.74076323	2.349959015	1.609195785	-0.075002732	1.534193053
	2021	-0.361953446	3.762786243	3.400832797	-0.038918589	3.361914208
	2022	-0.085315784	12.72116048	12.6358447	-0.035634957	12.60020974
	2023	-0.014625399	69.3742023	69.3595769	-0.007733531	69.35184337
Tourist Village	2018	0.295973784	-2.378677614	-2.08270383	0.053690904	-2.029012926

of Mosul Dam	2019	-1.329400566	1.752218726	0.42281816	-0.247602204	0.175215956
	2020	-0.184278201	6.426577818	6.242299617	-0.023019072	6.219280545
	2021	-0.607414371	2.64632259	2.038908219	-0.073574437	1.965333782
	2022	-0.714404887	2.39976646	1.685361573	-0.079385751	1.605975822
	2023	-0.072660122	14.76270736	14.69004724	-0.05493178	14.63511546

Statistical analysis

Table (5) Research variables

Company Name	Years	Closing price of the stock Y	Added value of intellectual capital X
Ashur Hotel	2018	7.200	2.912633358
	2019	7.900	-0.786366002
	2020	6.000	0.841169088
	2021	7.400	-0.296026504
	2022	9.250	0.614512265
	2023	11.900	-0.593653349
Baghdad Hotel	2018	8.550	22.10355052
	2019	8.400	23.61116068
	2020	8.000	10.0382913
	2021	8.100	3.211381876
	2022	9.900	22.74149698
	2023	10.750	2.387114444
Babylon Hotel	2018	44.500	14.75708024
	2019	75.000	14.89744993
	2020	77.600	7.680142825
	2021	80.000	17.30992925
	2022	93.000	9.185053673
	2023	100.000	18.21657507
Ishtar Hotel	2018	12.740	2.42942154
	2019	11.000	1.361185063
	2020	10.500	-0.988423682
	2021	10.500	-6.06130594
	2022	9.200	1.065195668
	2023	9.700	5.486191403
Rehab Karbala	2018	1.000	1.913550271
	2019	0.850	2.854239467
	2020	0.780	1.629661983
	2021	0.700	2.297040418
	2022	0.650	2.015417184
	2023	0.920	2.020054706
Al Mansour Hotel	2018	11.890	2.467454448

	2019	12.000	2.516539785
	2020	13.000	0.395090059
	2021	9.000	1.44513601
	2022	10.500	2.667427846
	2023	40.000	26.97915519
National Tourism Investments and Projects	2018	7.000	5.702179721
	2019	9.100	5.680617381
	2020	7.760	7.033554382
	2021	8.650	6.712918478
	2022	10.600	5.523610204
	2023	11.100	12.78606018
Al Sadeer Hotel	2018	14.500	1.507004206
	2019	11.900	0.827570015
	2020	11.000	1.534193053
	2021	10.700	3.361914208
	2022	15.000	12.60020974
	2023	21.550	69.35184337
Tourist Village of Mosul Dam	2018	5.000	-2.029012926
	2019	4.900	0.175215956
	2020	5.000	6.219280545
	2021	3.650	1.965333782
	2022	7.000	1.605975822
	2023	6.000	14.63511546

Statistical analysis

Using the statistical program (SPSS), the following statistical indicators were extracted, using closing price of the stock as an independent variable and added value of intellectual capital as a dependent variable of the simple linear regression model.

Table (6): Statistical Indicators

	r	R^2	β	F	t	D.W	VIF
Ashur Hotel	0.426	0.182	-0.642	0.889	-0.943	0.769	1
Baghdad Hotel	0.147	0.021	-0.016	0.088	-0.296	0.847	1
Babylon Hotel	0.006	0	0.025	0	0.011	0.631	1
Ishtar Hotel	0	0	-3.E5	0	0	0.643	1
Rehab Karbala	0.03	0.001	-0.01	0.004	-0.064	1.22	1
Al Mansour Hotel	0.982	0.975	1.134	154.04	12.411	2.395	1
National Tourism Investments and Projects	0.554	0.304	0.317	1.768	1.33	1.96	1
Al Sadeer Hotel	0.928	0.861	0.139	24.83	4.983	1.617	1
Tourist Village of Mosul Dam	0.276	0.026	0.052	0.329	0.547	2.01	1

Results

1. The correlation coefficients of the model were all weak except for the Mansour (0.982), and Sadeer (0.928) hotels.
2. The determination coefficients were also weak and could not explain the explanatory variables, except for the Mansour hotels (0.975), which explains 98% and the remaining 2% are due to external factors, as well as the Sadeer hotel (0.928) explains 93% and the remaining 7% are due to external factors, and the Babylon and Rehab Karbala hotels could not explain any of the explanatory variables.
3. The marginal slope was positive for each of the hotels of Babylon, al-Mansur, National Tourism Investments and Projects, al-Sadeer, and Tourist Village of Mosul Dam. F & t statistics were only significant for the Mansour and Sadeer hotels, the rest of the hotels did not have any moral effect.
4. There is no problem of multilinearity for all hotels, with a self-correlation problem for each of: Ashur, Baghdad, Babylon, Ishtar, and rehab Karbala.

From this we conclude we accept the null hypothesis and rejection of the alternative hypothesis for all hotels except Mansour and Sadeer hotels. That is, there is no effect of the efficiency of intellectual capital on the market value of the shares of tourism companies listed on the Iraq Stock Exchange

Conclusions

1. Accounting thought needs a different approach that reflects the true value of the organization in an era that relies primarily on knowledge economies and information technology. The essence of this approach is intellectual capital, that important element that the financial statements of organizations neglect, and thus lack their ability and credibility in showing the true value of these organizations, as it is a group of intangible knowledge assets that work as an integrated system with the aim of creating additional value for the organization and enhancing its competitive ability.
2. Intellectual capital measurement is a complex process that involves the use of a combination of quantitative and qualitative methods to identify and value the intangible assets owned by an organization
3. Academic literature confirms that intellectual capital efficiency plays a pivotal role in improving financial performance and increasing market value of companies. Therefore, organizations should focus on strategies to develop human capital, enhance organizational infrastructure, and strengthen their relationships with stakeholders to ensure sustainable competitive advantage.
4. there is no effect of the efficiency of intellectual capital on the market value of the shares of tourism companies listed on the Iraq Stock Exchange ,The results of this research were not consistent with many previous studies. This may be due to the difference in the economic environment of the research sample or the difference in measurement tools.
5. Limiting the research to companies in the tourism sector represents a limitation to this research, and researchers can apply the research model to other economic sectors in future work.

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