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Research Paper

# Evaluation the Intellectual Capitals in the Company's Financial Performance

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**Abstract**

The intellectual capitals are the most important source of economic investment. With going the communities from the industrial age to information age, the importance of intellectual capital has increased. We can enumerate the importance from such factors like information technology revolution, the increasing importance of knowledge and knowledge-based economy and also influence of innovation and creativity as determinant element of competition. The purpose of study is determining the evaluation the intellectual capitals in the companies' financial performance. The main problem is lack of appropriate pattern identification for Evaluation the intellectual capital. Type of the research is applied and use of descriptive – analytical method. The tools for data collection with refer to library resources are including books, weekly magazines, Monthlies, journals, publications of research centers, academic theses and searching in electronic data bases such as the Internet. Different categories is presented for intellectual capitals in this article that one of these categories were discussed with VAIC name (added-value of intellectual capital) by Pulic, that it is consists of three components: efficiency of physical capital, efficiency of human capital, efficiency of structural capital. Also the model of calculating the intellectual capital (independent variable) is described and evaluation the intellectual capital in companies' financial performance is evaluated. It will be clear in the final analysis that the limitations of provided financial forms by traditional accounting in explaining and expanding the value of companies relies on the fact that the resources and economic value are not only producing the goods and having a stock or a high turnover of cash, but we should also be considered the intellectual capital in the worst state. Also the Pulic method is used by financial forms and its notes with it for this task because its method in calculation is easy and as we know the financial forms show things witch exist in fact and they are not made in mind and it looks to the thing that exists in company with a financial view, and it is recommended for evaluation the intellectual capital.

**Keywords:** Evaluation the Intellectual Capital; Added Value (VAIC); Financial Performance

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## Introduction

Today workers, technicians, engineers have to learn the new knowledge. Successful managers are working with dreams of creating value for customers and the best way to achieve this goal is that not only considered people as production costs, but they know them as the resources can provide sustainable and valuable help. Increasing the value of Economic activity by knowledge management create the work strategies and help to develop the main engine of economy efficiently [1]. Intangible assets that are protected by law and had them intellectual property title and includes the royalties and copyrights and franchise and trademarks and brands, some of them are reflected

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in the balance sheet and the other intangible assets that are including the intellectual capital, act Under the principles of economics, it means that would not decrease of their value by more use of them and Usually are not reflected in the balance sheet [2]. Therefore, the intellectual capital includes the part of total capital or assets of a company that is based on the knowledge and it is its holder and owner. So the intellectual capital can include the knowledge that changed to intellectual ownership (intellectual asset) of company and also its final result [3].

The purpose of this study is determining evaluation the intellectual capitals in the companies' financial performance. The main issue of research is lack of identifying the appropriate model of evaluation the intellectual capitals. In this article, after reviews the research literature and analysis - a comparative offering the different methods of measuring the intellectual capital and reviews the theoretical principles and describes the components of intellectual capital classification the methods of measuring the intellectual capital and method of accounting the intellectual capital (by use of Pulic model) in financial performance of companies, effective model in evaluation the intellectual capital will be offered.

**The theory and literature that related to the intellectual capital**

Druker (1993), famous thinker of management says: we are coming to a knowledge society that its main economic resources are not more investment, natural resources, and more work force and etc [4]. but the main economic resources will be knowledge. 21st century is the economic knowledge century [5]. Business environment will be changed surprisingly, and will be investment on the information, information technology, electronic commerce, soft wares, Marks, royalties, researches and innovations, www and etc in business and economy of 21st century [6]. The companies worked under the principles of rare economics in old industrial paradigm [7]. According to thinking of "Horib", goodwill is the difference between the real (market) value of company and its value office [8]. Companies not only need to identify and measure and manage their intangible assets, but they should always try to improve and promote these intangible assets continuously. The organizations that may not be able to improve their knowledge assets continuously, will exchange their survival with risk of losing their own [5]. As see in the figure 1, history of knowledge can have four dimensions: technology, historical period or background, pattern or paradigm, the structure of knowledge [3].

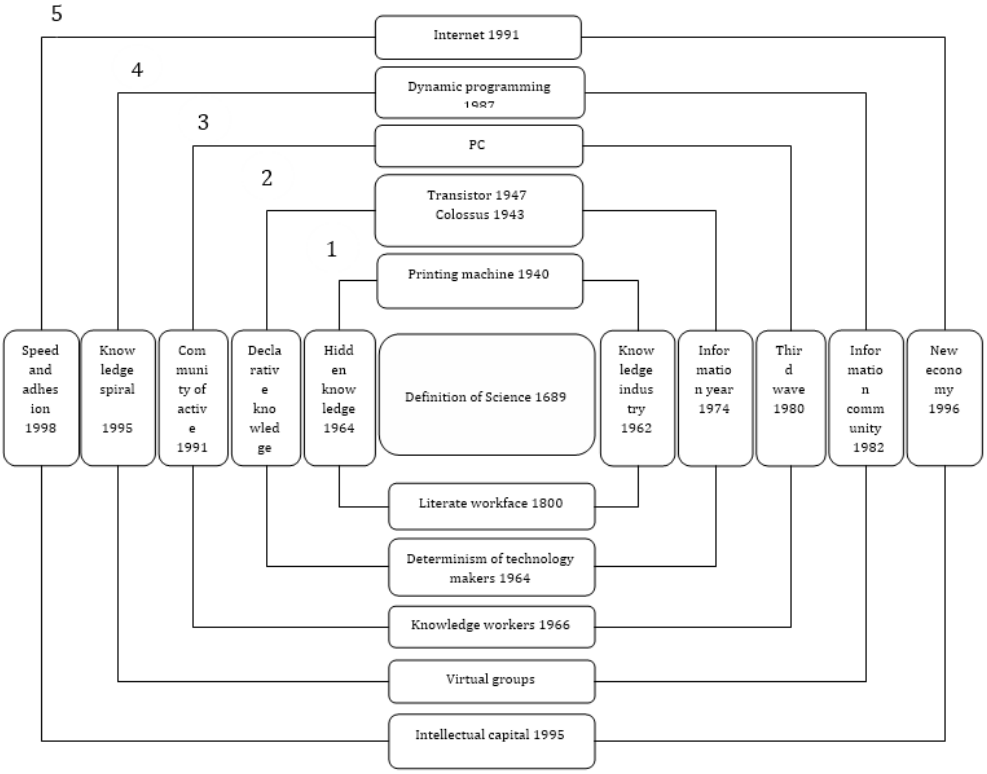


**Figure 1.** History of knowledge can have four dimensions.

Figure 1 shows the analysis -comparative results of different methods of measuring the intellectual capital. Each of these methods were compared according to be Quantitative or qualitative, based on the performance of past or future and be able to modeled or lack of it.

**Table 1.** Comparison of evaluation the capital investment [9].

| Method | Quantitative or qualitative | Performance of past or future | Usability in modeled |
|---|---|---|---|
| **Invisible balance sheet**<br>Structural capital<br>individual capital | Some quantitative | Based on historical costs | No |
| **Control the intangible assets**<br>Outside view<br>Inside view<br>Individual competence<br>the intangible assets | Qualitative | Both of them | No |
| **Balanced score card**<br>Financial view<br>Costumer view<br>Process view<br>Learning and innovation view | Qualitative | Both of them | No |
| **Economic increased Value**<br>Financial planning<br>Budgeting<br>Target, to compensate | Qualitative | Based on historical costs | Only internal |
| **Indicator of intellectual capital**<br>Financial and non-Financial Strategies and criteria | Single criterion | Based on potential factors that create a value | limited |
| **Use of technology**<br>Market's assets<br>Human assets<br>Intellectual property of Infrastructure assets | Changing from qualitative to quantitative | Both of attitude (cost and market) | limited |
| **Rate of asset return**<br>Total performance of assets | Single criterion | Based on historical costs | Yes |
| **Direct intellectual Capital**<br>Market<br>Intellectual property<br>Technology<br>Human assets | Quantitative | Based on components of market's assets | Yes |
| **Askandya's Commercial Orientation**<br>Financial, costumer<br>Human process<br>Development | Some quantitative | Both of them | No |
| **Financial methods**<br>Human<br>Costumer and Structural Capital<br>Sharing of these | Quantitative | Based on market price | Yes |

## Discussion and explain the components of intellectual capital

In the more accepted plan of classification, intellectual capital is divided to three parts: human capital, structural capital and customer capital[1]. The human capital is basic of intellectual capital and is also the basic element in implementation of its tasks [10]. This capital can be considered as innovation maker, if this innovation related to the new product or service and if in the field of improve the commerce processes [11]. Human capital is including knowledge, skills and abilities of organization's employees. This kind of capital is capability and competence of manpower to solve the organization's problems. Human capital is integral part of employees and could not own by the organization. Therefore, it will disappear when employees leave the organization [12]. Structural capital related to freedom and structure of a commercial corresponding and it can help to employees in intellectual optimal performance and thus the organization will be able to do better its performance [10] (Chen, 2004). Structural capital can be applied to anything that exists in the organization and help to the employees (human capital) in their work. The kind of capital as a supporter infrastructure helps to human capital to do his duties. Structural capital is under the ownership of organization and it exists when even employees leave the organization. Because of the variety in components of structural capital, usually is separated to the organizational, process[2] and innovative capital [12]. Organizational Capital

includes some systems for tonicity and lever the organization's capabilities. Process Capital includes techniques, procedures and programs to apply and improve the carrying goods and services. Innovation capital includes both of intellectual assets and intangible assets. Intellectual assets are supported rights such as copyright's law and brands. Intangible assets are the other talents that the organization acts with them (the same source). Customers' capital is considered as a bridge and organizer of intellectual capital's operations and is also a determinant factor in change the intellectual capital into the market value [10]. This capital is including the strength and loyalty of relations and customer relations. Customers' satisfaction, financial health and price sensitivity may be use as the indicators of this kind of capital. Separation of The customers' capital of structural and human capital reflects the importance of its in organization's value [12].

**Financial methods and stages of financial measuring the intellectual capital**

Based on this method, the intellectual capital of a company is consisting of costumer's capital and structural capital and shared parts together show a combination of the intellectual capital. The combination of human and customers' capital result to the relations between the persons and their near to customers and use of their creativity for answer to the special needs of customers. The combination of structural and customers' capital reflects the company's ability in moving the brands to costumers and connects to quality of value that customers give to company. The combination of human and structural capital is hidden in the process of knowledge. For example, we can point to sharing in use of existing knowledge or its publication. This method would be able to money measurement of three components that was said and present the appropriate tools for evaluation, management and compare the performance of companies to managers in during time. To measurement and financial evaluation of the intellectual capitals, below stages are presented:

***First step:*** Determining the visible intellectual capital:

- Market's value = tangible value + intangible value
- Market's value = official value + value of visible intellectual capital
- Available Market's value = Market's value + erosion of intellectual capital
- Available Market's value = tangible capital + (visible intellectual capital + erosion of intellectual capital)

***Second step:*** recognition of related components with intellectual capital

***Third step:*** allocating the suitable weights to components of intellectual capital based on analysis and recognition of them

***Forth step:*** adjustment the correlation coefficients

***Fifth step:*** Evaluation

**Classification the methods of measuring the intellectual capital:**

a) Classification the methods of measuring the intellectual capital from Clint B. & Darren B:

Methods for measuring intangible assets are done by recognition of variable components of it. These components are clear once, those that can be evaluated directly, separately or as an accumulate coefficient.

b) The method of estimating the capital market value (MCM)

The estimated difference is between the Investment market value of a company and the rights of specified stock as intellectual capital or intangible assets.

c) The methods of return the assets (ROA)

The average of incomes after the companies' tax for a period of time is divided by the average of the company's visible assets that the result is company's ROA that after it will be compared with the average of industry. The difference has been created is in estimation of annual income average from intangible assets with the average of the company's visible assets, we can result a estimation of intangible assets' value or intellectual capital by dividing the average of said incomes on the average of company's investment costs or an interest rate.

d) The methods of rate card

The different parts of intangible assets or intellectual capital have been recognized and the made scales and the indexes have been reported in rate papers or has been shown in the chart. SC methods are like DIC methods that do not have any dollar estimate of intangible assets [2].

**The method of calculating the intellectual capital (by using the Pulic model) in companies' financial performance**

Pulic presented the value-added of rational efficiency (VAIC) to measure the companies' intellectual capital in 1998 and 2000. In VAIC method (value-added of rational efficiency) of Pulic [13], to get information about efficiency value has been made; the objective and non-objective assets of a company have been provided. This model begins with ability of company than to create the added value (VA). Value-added is difference between IN and OUT. The purpose of OUT is total incomes from selling the products and services that have been submitted to the market and the purpose of IN is all the costs that have been spent for product the goods and services.

We should attention to the important note that in this model (Pulic) work's cost (total cost of law, wages and its' benefits) and amortization costs are not including costs of IN. salaries and wages rather than the active role in the crated process of value, potential factor (that is made by costs of the work) is not considered as a cost. So the basic code in Pulic model is the work's behavior as created value of a commercial company. The result is that value has been used by human capital and structural investment will be reflected [14]. Depreciation costs also is not a part of IN at VA because no money is not exited from company. So we can show the VA as the following equation:
VA= Depreciation cost + costs of law, wages + operational profit

*Calculating the efficiency of physical capital (VACA):*
Value-added (VA) of the physical capital that has been used, is efficiency of physical capital that this index is for showing the created added-value (VA) by physical capital.

VACA= VA/CA=added- value/ visible assets
CA=total of assets – intangible assets= visible assets

VACA explain the mental ability of companies than using the physical capital to create a value-added. When the different groups of companies are compared together, the companies that have higher VACA show that they have gained higher value-added (VA) to their physical capital.

*Calculating the efficiency of human capital (VAHU)*
Efficiency of human capital shows that, how VA has been created by more used Rials for cost of salaries and wages in the company. Ratio of VA to HU explains the ability of HU to create the value in a company. Consistent with other leaders of the author of intellectual capital [15]. Pulic say that the total costs of salaries and wages is an index of a company. Pulic assume that determine the market of salaries and wages, that it is the result of performance, so ratio of VA to HU, explain the ability of HU to create the value in a company. [16].

VAH= VA/HU= (added-value)/ (The cost of salaries and wages of Company)
HU= all of the paid salaries and wages to human resources.
In a similar, when VAHU are compared in a level of companies group, VAHU is an index of the quality of company's human resources and its abilities to create the VA for every Rial that have been spent on HU. And the companies that have lower VAHU show that more added-value has been created than costs of salaries and wages, it means that efficiency of employees of the company is high.

*Calculating the efficiency of structural capital ( STVA):*
The third connection is "efficiency of structural capital" (STVA) that show share of the structural capital in creating the value. In Pulic model, SC is equal with VA minus HU. In measuring the STVA, some of SC is needed to produce a dollar of VA and it is an index of how successful of SC in create the value. Unlike VAHU; VACA, VA is divisor for STVA. So the third connection between VA, SC is calculated as following:

STVA= (structural capital/ added-value)
SC= VA – HU= (added-value) – (total cost of company's salaries and wages)

The final ratio is calculating the intellectual ability of a company and it is a summary of former consideration efficiencies. This result is in a new index and that unit of VAIC:

VAIV= VACA + VAHU + STVA

For calculating the financial performance of companies ASR, EPS, ROE have been selected.

A. Profit of one year to salaries of the shares' owner (ROE) measure that how much profit has been resulted in a year for per unit of salaries of capital's owners. In fact ROE explain a ratio of profitability in company. This ratio is provided for showing the power of company's profitability to shareholders' official capital that most of time is compared between two or several companies in an industry. The formula of obtain the ROE is as fallowing:

$$ROE = \frac{\text{Resulted profit for shareholders}}{\text{Normal (profit after tax)}}$$

B. Income of every share (EPS) is a normal index that was used normally for analysis the companies' components in financial market. The companies that accepted in exchange must express their annual EPS in general assembly of shareholders. In fact, EPS is an index that reports the profitability that resulted of the financial activities, investment and decision of company. The formula of obtain the EPS is as fallowing:

$$EPS = \frac{\text{Resulted profit}}{\text{Total amount of shares in}}$$

C. Annual dividend (ASR) is measuring the changes in price of shares is including profits of shares, modifications for any type of stock analysis. The profits from shares ownership are achieved of two sources:
   1. shares profits and distribution of other cash and
   2. increasing the value of shares

So the formula of ASR is obtained as fallowing:

$$ASR = \frac{[price\ of\ every\ year\ share(X + 1year)] + dividends = (P_1 - P_0) + D}{price\ of\ shares\ (x\ years)P_0}$$

## Foreign reporting of the intellectual capital

The editor panel of the financial Accounting Standards (FASB) determine the basis of accounting and measurement the intangible assets in standard number 142 under the title "goodwill and other intangible assets". The intangible assets that earned from a source out of the company at first they are identified as common values. If an intangible asset were created internal, it will be identified as cost in tolerance time [17]. In development of its statement, the panel also emphasis on 4 identified criterions that was pointed to them in concepts statement number 5 under the title "identify and measure in the financial forms of commercial units. The criterions are as follows:

1. The considered Pen, have a defining of asset,
2. We can measure it reliability,
3. The Information can make a difference in decision making, and
4. Resulted information from the pen must be presented honestly, be Verifiable, and is also lacking in orientation.

Because of to be new the concepts and lack of general agreement on measuring the intellectual capital, more its items do not meet second criterion (Reliably on measuring) and fourth criterion (Ability to handle or objectivity). As long as these two criterion is not met, identify many of the intellectual assets in financial forms will be with doubt (the same source).

National standards number 17 under the title "intangible assets" say that a pen when is identified as an intangible asset that (A) be Consistent with defining of intangible asset. (B) Recognized the topics of understanding in 12 to 14 clauses (including be possible the economic interests of the property future within the commercial unit and capability of measuring the by price of all property in a reliability way) (eleventh clause). In order to evaluate that a created internal intangible asset has recognized standards, a commercial unit classify the creation of asset in two categories: (a) research stage and (b) development stage. Expenses of research or the expenses that spent in the research stage of an internal project must be identified as cost in occurrence time and development expenses or the expenses that spent in the development stage of an internal project is only identified as intangible asset that all the following conditions Be demonstrated:

1. Possibility of Complete the intangible assets in technical view, in a way that they prepared for use or sale,
2. Purpose of commercial unit to complete the intangible asset or using and selling it,
3. The ability of Commercial unit to using or selling the intangible asset,
4. Create the future economic benefits in result of intangible assets,
5. Access to enough technical, financial and other resources benefits for complete, development and use or sale the intangible asset, and
6. Ability of Commercial unit to measuring the costs attributable to the intangible asset reliability during the development period.

With regard to above explanations and condition and standard idea based on spending money for educational activities, it seems that identify many of the intellectual assets in financial forms be with doubt.

## Conclusion

Knowledge management is still defining own. Body of literature and theory research in this field is small but is growing. Future using of knowledge management Depends strongly on quality of output and made efficiency by the output Management that must prepare the tangible value-added for the organizations. In fact, the main issue of the research is lack of identifying the suitable pattern for evaluation the intellectual capital. Since that resources could not be always transferred, imitation and replace; it is necessary that attention seriously to inside of companies Instead of attention to outside for identify the real and lasting sources. The organizations are entering to the economy based on knowledge. It is an economic that the knowledge and assets are the most important competitive advantage of organizations. Today, the method of using the intangible assets has the important effect on success and survival of organizations that this issue has led to create the field of studies and serious researches in management.

On the other hand, often the present accounting systems are unaware of the role and increasing importance of intellectual property rights and knowledge in the organization in modern age and they cannot measure the real value of assets in their accountings. In new knowledge-based communities, the used efficiency of intellectual capital is more than the used efficiency of financial capitals and has more significant; it means that the role and importance of financial capital have been reduced strongly to intellectual capital in determining the ability lasting profitability. The limitation of the provided financial forms by traditional accounting in explanation of companies' value believes that the resources and economic value is not only production of goods and having

cash and high circulation of cash, but we must consider the intellectual capital in the worst situation.

As that said in before parts, there are the various methods to calculate and measurement of intellectual capital that have been said the advantages and disadvantages of each them. In this research, the Pulic model is preferred to calculate and measure the intellectual capital that the model is used because use of it is easy that is used of the financial forms and the notes with it for this work. And as we know as the financial forms show that is exist in real and it is not made and polished in mind and look to the thing that exist in company from financial viewpoint.

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