

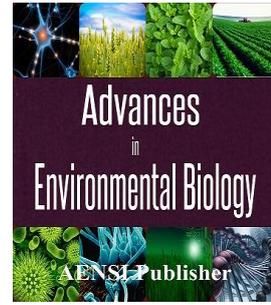


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The impact of intellectual capital on the financial performance of pharmaceutical companies accepted in Tehran Stock Exchange

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ABSTRACT

The present study examines the impact of intellectual capital on the financial performance of pharmaceutical companies admitted in Tehran stock exchange. To evaluate intellectual capital coefficient of the added value of intellectual capital (VAIC) Pulic is used, the performance of three types of data includes: The capital used or physical (VACA), human capital (VAHU), and structural capital (STVA) are examined. Also to assess financial performance, return rate on assets (ROA), earnings per share (EPS), return on equity (ROE) measures are used. This research analytical and separately examines the effects of each of the components of the index value of intellectual capital on the financial performance of 26 companies in the pharmaceutical industry and accepted in Tehran Stock Exchange during the period 2009 to 2013 using multivariate regression based panel. The results show that the added value of intellectual capital has a significant impact on variable rate of financial performance of pharmaceutical companies listed in Tehran Stock Exchange and among its components used or physical capital, has the greatest impact on financial performance variable.

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INTRODUCTION

With the arrival of knowledge economy, knowledge is more important and has more priority compared to other factors of production such as land, capital, equipment, and..., so that in this economy, knowledge is considered as the most important factor of production, and it is named as the most important competitive advantage of organizations. One of the characteristics of knowledge is that it is intangible, so it is difficult to measure and evaluate it. If in the past, organizations using traditional methods of accounting were able to fully calculate the value and size of their production, but today these accounting methods, no longer have the efficiency. In the past, most of the assets of the organization, were evident, today, most part of the assets of organizations are intangible [7].

With the course of communities from the industrial age to the information age the importance of intellectual capital is increased. The importance of such factors can be derived from the information technology revolution, the growing importance of knowledge and knowledge-based economy and the impact of innovation and creativity as a crucial element of competition is [12]. At the present time the stock price is so much dependent on the understanding of the future that is not identifiable and measurable in the current financial accounting. Companies are well aware that the intellectual capital is their only competitive advantage; but the financial reporting lack the information related to intellectual capital resources. A review of the literature on intellectual capital confirms interest in measuring and reporting its valuation. Companies for strategic survival should consider the competitive advantage and since markets, products, technology, competition and regulation in society are changing fast in and continuous improvement of knowledge and innovation, they will be able to maintain a sustainable competitive advantage [15]. So today, managers consider knowledge and ability to create and using knowledge as the most important sustainable competitive advantage. Because knowledge is regarded as an asset, and efforts to implement knowledge management and intellectual property, has been associated with

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great success in guiding organizations. In the present era the development of knowledge-based economy, intangible assets of companies and their intellectual capital are the keys to achieving sustainable competitive advantage [19]. Because knowledge is regarded as an asset, and efforts to implement knowledge management and intellectual property, has been associated with great success in guiding organizations. In the current business structure efficiency of intellectual capital used is much more important than the financial return on capital used. This means that in contrast to the intellectual capital, the importance of financial assets in determining sustainable profitability is significantly decreased. Due to the increasing relative importance of intellectual capital (an important part of the company's total assets) in a sustainable long-term profitability, most companies are trying to find answers for this question that whether statistically, intellectual capital, has no effect on firms listed in Tehran Stock Exchange? And whether the use of models based on intellectual capital can help the shareholders and investors in their future decision making? And whether the use of this model leads to a higher net profit for the company?

Theoretical Principles And Develop Of Hypotheses:

Many theorists and researchers in describing the features of the new economic environment believe that the economy has got a global and inclusive shape, and is formed from intangible assets, and intangible complex incomes which are mixed together in a particular way. In this environment productivity and competitive advantage of firms depends on production capacity, processing and application of knowledge has been sustainable in global range.

Intellectual capital:

What all authors agree on is that intellectual capital is a form of knowledge which creates competitive advantage and displays the intangible value of a company. In initial impression, intellectual capital may be defined as the set of all knowledge which has been possessed by the employees and the company and creates a competitive advantage or in other words they have defined the intellectual capital as intellectual circuits such as knowledge, information, and analysis of intellectual property, which through them companies can benefit of in order to create a fortune [5]. Bontis in 2000 has defined intellectual capital as a concept that classifies intangible resources and their interrelation; so, managers need to be able to measure the effect of knowledge management efforts on the performance of their organization. In this study, the three components of intellectual capital, including human capital, structure and communication is used.

Human Capital:

Human Capital represents knowledge of the individuals of an organization. Bontis describes human capital as a collective capability to extract the best solutions from the knowledge of men [4]. Ross and colleagues also argue that employees create their intellectual capital through competence, attitude and their agility in thinking. Mental agility enables the individual to change the practices and thinking about innovative solutions for issues. Broking also believes that the assets of an organization include the skills, expertise, ability to problem-solving and leadership styles [3].

Capital structure (organizational):

Capital structure includes all reserves non-human knowledge including databases, organizational charts, and processes and operating procedures, strategies, organizational action plans [16]. Chen and colleagues believe that the capital structure refers to the current business structure and procedures of the organization. In their view, capital structure can more clearly classify as organizational culture, organizational learning, operational processes and information systems. Human capital and structural capital with interacting with one another can help organizations to shape costume capitals and use and develop them harmoniously [8].

Relational capital(customer):

Although the term 'customer funds were raised primarily by Hubert, new definitions, have developed its concept to relational capital, includes all relationships of the organization with customers, competitors, suppliers, trade associations or government establishes [3]. Chen *et al* classify customer capital in the form of marketing capability, the severity of market and customer loyalty. Without relational capital the market value or the performance a business or organization cannot be realized; therefore, relational capital growth depends on human capital and structural capital [8].

Performance criteria and its types:

Numerous studies has long been conducted to achieve a sufficient criterion for assessing performance of corporate and directors of the company in order to ensure alignment with the interests of potential investors and as a basis for making economic decisions of potential investors and creditors. The results obtained from these studies provide four approaches in terms of performance criteria which include financial approach, the economic

approach, integrated approach (market) and fiscal management approach. In this study, the financial perspective is examined. To achieve the main objective of this research and by taking this approach, the main hypotheses can be proposed as follows:

H1: Value added intellectual coefficient (VAIC) has an impact on financial performance (with standard ROA) of pharmaceutical companies listed in Tehran stock exchange.

H2: value added intellectual coefficient has an impact on financial performance (with standard EPS) of pharmaceutical companies listed in Tehran stock exchange.

H3: value added intellectual coefficient has an impact on financial performance (the benchmark ROE) of pharmaceutical companies listed in Tehran stock exchange.

Financial approach (accounting):

This approach is embodied in the case of financial figures such as earnings, earnings per share, operating cash flow and return on assets and return on equity are used to evaluate performance (Ansari and Karimi, 2009). Accounting standards for performance evaluation emphasize on income statement and balance sheet meaning that an outflow of cash as a cost in case of profit and loss or as a capital asset on the balance sheet can reflect as the costs which results in providing profit and loss Statement and a different balance sheet arising from the use of different procedures. The ratio of return on equity, return on assets and earnings per share include the accounting performance measures. However, these measures have objections, for example, unrelated and unaffected profit following the principle of historical cost and the realization of the impossibility of comparison between different economic units due to different accounting methods, because by basing the profit and various items of profit and loss and the balance-sheets which are provided with different methods can damage their usefulness. With the introduction of performance aspects discussed in this study and by considering the components of intellectual capital in its calculation, the following sub-hypotheses can be proposed to evaluate financial performance:

H11: Each of the components of value added intellectual coefficient include: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) has an impact on return on assets (ROA) of pharmaceutical companies listed in Tehran stock exchange.

H21: Each of the components of value added intellectual coefficient include: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) has an impact on earnings Per Share (EPS) of pharmaceutical companies listed in Tehran stock exchange.

H22: Each of the components of value added intellectual coefficient include: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) has an impact on return on equity (ROE) of pharmaceutical companies listed in Tehran stock exchange.

Review of research background:

Tan *et al.* [18], in their study using the Pulic model with a focus on Asia and obtaining information on the 150 companies of Singapore Exchange between 2000 and 2002, using PLS test (for data analysis) examined the relationship between the three sectors (human capital, structural capital and relational capital) with financial efficiency (performance) of companies, based on return on equity, earnings per share and return on total common stock. The results indicate that firstly there is a significant positive relationship between company's intellectual capital and the current and future financial performance of the companies and secondly, the impact of intellectual capital on the financial performance of companies in various industries is different Nazari [14], investigates and explains the relationship between the elements of intellectual capital and financial success of companies in which 775 companies between 1996 and 2006 are studied. The results suggest that human capital has a significant positive relationship with the structural capital; in addition, there is also a positive relationship between human capital and company performance. In this research to calculate the components of intellectual capital, pulic method is used; and also to measure the performance the ROA, ROE methods and the changes in sales are used [14]. Zegal [20] studied value Added Intellectual Capital and financial and economic performance, and market value of 300 English companies in three groups of technology, traditional and service industries. For measuring intellectual capital of Value Added Intellectual Coefficient Pulic model was used, results of the tests show that the performance of intellectual capital has a significant positive relationship with economic performance and financial performance, but in the case of market value in the technology industry it is just an important relationship [20]. In a study of Maditinos *et al* [13], which is titled the impact of intellectual capital on the market value of the company and its financial performance, public method was used for measuring intellectual capital. one of the assumptions is that companies that have a higher intellectual capital, have higher rates of market value on book value; finally the experimental results failed to support this hypothesis and this hypothesis is rejected [13]. Chang and Hsieh examined the relationship between intellectual capital components and three functions of operational, financial and stock market in Taiwan electronics industry to measure intellectual capital, value added Intellectual coefficient model is modified. The results show that the relationship between operational performance and the used capital is positive and has no relationship with

human capital and structural capital [10]. Clark and colleagues [10] examined the relationship between intellectual capital and company performance in Australia where a sample of Australian companies between 2004 and 2008 are examined. The results show there is a direct relationship between intellectual capital and financial performance of Australian companies. Also a positive relationship between intellectual capital (human capital and structural) was also found in the previous year and the current year's financial performance [11]. Cheng *et al* [8] in a study titled "resource investment, competition and intellectual capital and firm performance aimed to investigate effects of intellectual capital, human capital, customer, process innovation on corporate performance." an was conducted in health industry and for a four-year period, experimental results indicates an important relationship between intellectual capital and company performance and the results showed companies can improve their performance by human capital value added [9].

Research Methods:

This study an applied research and it is non-experimental correlational research method. Also in terms of data it is after event type. The research population consists of companies in the pharmaceutical industry listed on the Tehran Stock Exchange. The reason for choosing these companies as the statistical community is the easy access to their audited financial statements as well as access to information on the corporate stock in different times. Regarding the 5-year period of the study (from the beginning of 2009 to the end of 2013) firms have been chosen, that have been a member of the Tehran Stock Exchange at least since the beginning of 2009 and have handed their fiscal year-end financial statements to the exchange for research period. The stocks of said companies should be traded at the beginning and end of their financial year. Their information should be available on the official site of the Tehran Stock Exchange. The sample size consists of all the all companies of statistical population with above specification. Since a major confusion and lack of resolve on activities, performance and reports of the company leads to a Long-term stop of companies logo by securities and exchange company and this leads to a lack of access to company information and affects the decision of shareholders, therefore, the characteristics of the population and the number of 3 companies were eliminated in order to create uniformity. Finally, with regard to the above requirements, the sample will be 25 companies listed in Tehran Stock Exchange and active in the pharmaceutical industry. In this study, data collection methods of research literature are Library method including books and various articles and domestic and foreign publications. Also the data collected in this study, is obtained from banks and valid software including the "Rahavardnovin 3" and the audited financial statements of listed companies in Tehran Stock Exchange and extracted from "Kadal" site, also from the official website for price announcement (www.tsetmc.ir), which gives the researcher audited information and needed data in this study. Also to sort and classify data, excel 2010, and for data analysis "Eviews" software were used.

Research Findings:

First the effect of added value of intellectual capital coefficient on financial performance pharmaceutical companies listed in Tehran Stock Exchange is tested. And after the main hypothesis testing a separate sub-hypothesis examines the relationship between the components of intellectual capital coefficient of added value including: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) with the financial performance of pharmaceutical companies listed on the Stock Exchange. To test research hypothesis correlation method between variables and regression equations through panel data were used.

The analysis of the first hypothesis (H1):

This hypothesis has been raised about the existence of the effect of added value of intellectual capital coefficient (VAIC) on financial performance (with standard ROA) of pharmaceutical companies listed in Tehran Stock Exchange and it gets tested using the following model:

$$ROA_{it} = \alpha_0 + \alpha_1 VAIC_{it} + \alpha_2 MV_{it} + \varepsilon_{i,t}$$

First, the type of model, cross-sectional and time fixed effects is tested. In the combined data effects of long-sectional data and the simultaneously effects were tested. In all tests of the hypothesis, according to the Chow test statistics about the effects of sectional constant which its probability is smaller than 0.05 and about time constant the probability is greater than 0.05 Sectional fixed effects model is preferred. After the Chow test and choosing the time fixed effects model, for the closing of test data method between fixed effects and random effects Hausman test is used. In the test all research hypothesis regarding the possibility of the test which is less than 0.05, at the 95 percent confidence level the random effects are rejected and fixed effects accepted. Also results of Dourbin watson statistics for all models show the relative independence of the data. The results of the first test of the main hypothesis are presented in Table 1.

According to F-statistics and its probability it can be concluded that the regression equation was significant at 99% confidence level. The modified determination coefficient of model indicated the levels of the relevant of independent variables with the dependent variable (ROA). According to Table 1 the modified determination

coefficient of model is 0.87; thus, on average, 87% of the changes of dependent variable are explained by this model. According to test results of possibility of variables, value added intellectual coefficient (VAIC) has a probability of less than 0.01 thus, this variable at the confidence level of 99% is significant, also variable of (MV) company as a control variable has a probability of less than 0.01 so this variable at the confidence level of 99% is significant. therefore, considering the significant, coefficient Value Added Intellectual Capital (VAIC) is the main variables of the model can be argued that there is a significant relationship between the coefficient Value Added Intellectual Capital (VAIC) and financial performance of pharmaceutical companies listed in Tehran Stock Exchange (ROA). Thus, according to the model, the research hypothesis is confirmed.

Table 1: Analysis of the main hypothesis.

| | | | | | |
|---------------------------------------|-------------|--------------------|--------------|-------------|---------------------|
| Modified coefficient of determination | 0.874359 | | | | |
| F statistics | 34.2494 | | | | |
| Probability (Prob) | 0 | | | | |
| Watson camera statistics | 2001292 | | | | |
| Explanatory variable | coefficient | Standard deviation | T-statistics | Possibility | Level of confidence |
| VAIC | 0.966172 | 0.163037 | 5.926087 | 0 | 99% |
| MV | 1.400899 | 0.37535 | 3.73225 | 0.0003 | 99% |
| C | -8.39914 | 5.677778 | -1.4793 | 0.1421 | not significant |

Analysis of secondary hypothesis (H1):

This hypothesis has been raised about the existence of the effect of added value of intellectual capital coefficient including: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) with Financial performance (standard ROA) of Pharmaceutical companies listed in Tehran Stock Exchange, and it gets tested using the following model:

$$ROA_{it} = \alpha_i + \alpha_1 VACA_{it} + \alpha_2 VAHU_{it} + \alpha_3 STVA_{it} + \alpha_4 MV_{it} + \varepsilon_{i,t}$$

The results of the sub-hypothesis test are presented in Table2

Table 2: Analysis of secondary hypothesis.

| | | | | | |
|---------------------------------------|-------------|--------------------|--------------|-------------|---------------------|
| Modified coefficient of determination | 0.97457 | | | | |
| F statistics | 123.436 | | | | |
| Probability (Prob) | 0 | | | | |
| Watson camera statistics | 207.625 | | | | |
| Explanatory variable | coefficient | Standard deviation | T-statistics | Possibility | Level of confidence |
| VAHU | 0.543494 | 0.159707 | 3.403068 | 0.001 | 99% |
| VACA | 44.32571 | 2.231442 | 19.86415 | 0 | 99% |
| STVA | 13.3768 | 4.049531 | 3.303295 | 0.0013 | 99% |
| MV | 0.983324 | 0.263763 | 3.728056 | 0.0003 | 99% |
| C | -24.5051 | 4.337778 | -5.64922 | 0 | 99% |

According to F-statistics and its probability it can be concluded that the regression equation was significant at 99% confidence level. According to test results of possibility of variables, value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) has a probability of less than 0.01 thus, this variable at the confidence level of 99% is significant, also variable of (MV) company as a control variable has a probability of less than 0.01 so this variable at the confidence level of 99% is significant. therefore, considering the significant, coefficient Value Added Intellectual Capital (VAIC) is the main variables of the model can be argued that there is a significant relationship between the coefficient Value Added Intellectual Capital (VAIC) and financial performance of pharmaceutical companies listed in Tehran Stock Exchange (ROA). Thus, according to the model, the secondary research hypothesis is confirmed.

Analysis of the second hypothesis (H2):

This hypothesis has been raised about the existence of the effect of added value of intellectual capital coefficient (VAIC) on financial performance (with standard EPS) of pharmaceutical companies listed in Tehran Stock Exchange and it gets tested using the following model:

$$EPS_{it} = \alpha_i + \alpha_1 VAIC_{it} + \alpha_2 MV_{it} + \varepsilon_{i,t}$$

The results of the test of the second main hypothesis are presented in Table 3.

According to F-statistics and its probability it can be concluded that the regression equation was significant at 99% confidence level. The modified determination coefficient of model indicated the levels of the relevant of independent variables with the dependent variable (EPS). According to test results of possibility of variables, value added intellectual coefficient (VAIC) has a probability of less than 0.01 thus, this variable at the

confidence level of 99% is significant, also variable of (MV) company as a control variable has a probability of less than 0.01 so this variable at the confidence level of 99% is significant. therefore, considering the significant, coefficient Value Added Intellectual Capital (VAIC) is the main variables of the model can be argued that there is a significant relationship between the coefficient Value Added Intellectual Capital (VAIC) and financial performance of pharmaceutical companies listed in Tehran Stock Exchange (ESP).

Table 3: Analysis of second main hypothesis.

| | | | | | |
|---------------------------------------|-------------|--------------------|--------------|-------------|---------------------|
| Modified coefficient of determination | 0.899289 | | | | |
| F statistics | 43.66264 | | | | |
| Probability (Prob) | 0 | | | | |
| Watson camera statistics | 1.895106 | | | | |
| Explanatory variable | coefficient | Standard deviation | T-statistics | Possibility | Level of confidence |
| VAIC | 18.16055 | 5.440051 | 3.338306 | 0.0012 | 99% |
| MV | 0.000249 | 4.48 | 5.556716 | 0 | 99% |
| C | 666.0061 | 62.68754 | 10.62422 | 0 | 99% |

Analysis of secondary hypothesis (H21):

This hypothesis has been raised about the existence of the effect of added value of intellectual capital coefficient including: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) with Financial performance (standard of ESP) of Pharmaceutical companies listed in Tehran Stock Exchange, and it gets tested using the following model:

$$EPS_{it} = \alpha_i + \alpha_1 VACA_{it} + \alpha_2 VAHU_{it} + \alpha_3 STVA_{it} + \alpha_4 MV_{it} + \varepsilon_{it}$$

The results of the test of Secondary hypothesis are presented in Table4. According to F-statistics and the probability of it can be concluded that the regression equation was significant at 99% confidence level.

Table 4: Analysis of secondary hypothesis.

| | | | | | |
|---------------------------------------|-------------|--------------------|--------------|-------------|---------------------|
| Modified coefficient of determination | 0.890.964 | | | | |
| F statistics | 3734808 | | | | |
| Probability (Prob) | 0 | | | | |
| Watson camera statistics | 185767 | | | | |
| Explanatory variable | coefficient | Standard deviation | T-statistics | Possibility | Level of confidence |
| VAHU | 15.13062 | 8.470962 | 1.786175 | 0.0771 | not significant |
| VACA | 613.2618 | 249.8268 | 2.454747 | 0.0158 | 95% |
| STVA | 83.27159 | 332.7794 | 0.250231 | 0.8029 | not significant |
| MV | 0.000262 | 4.56E-05 | 5.732242 | 0 | 99% |
| C | 418.8134 | 204.4934 | 2.048053 | 0.0432 | 95% |

According to results of the probabilistic model variables, value added capital coefficient (VACA), has a probability of less than 0.05, therefore, this variable is significant at 95 percent of confidence level. However, human capital coefficient (VAHU), and structural capital coefficient (STVA) have a higher probability than 0.05, so this variable is not significant at the 95 percent confidence level. Also variable of (MV) company as a control variable has a probability of less than 0.01 so this variable at the confidence level of 99% is significant. Therefore, considering the significant of only value added value added capital coefficient (VACA), and financial performance of pharmaceutical companies listed in Tehran Stock Exchange (EPS).

The analysis of the third main hypothesis (H3):

This hypothesis has been raised about the existence of the effect of added value of intellectual capital coefficient (VAIC) on financial performance (standard of ROE) of pharmaceutical companies listed in Tehran Stock Exchange and it gets tested using the following model:

$$ROE_{it} = \alpha_i + \alpha_1 VAIC_{it} + \alpha_2 MV_{it} + \varepsilon_{it}$$

The results of the test of the third main hypothesis are presented in Table5. According to F-statistics and the probability of it can be concluded that the regression equation was significant at 99% confidence level.

The modified determination coefficient of model indicated the levels of the relevant of independent variables with the dependent variable (ROE). According to test results of possibility of variables, value added intellectual coefficient (VAIC) has a probability of less than 0.01 thus, this variable at the confidence level of 99% is significant, also variable of (MV) company as a control variable has a probability of less than 0.01 so this variable at the confidence level of 99% is significant. Therefore, considering the significant, coefficient Value Added Intellectual Capital (VAIC) is the main variables of the model can be argued that there is a significant relationship between the coefficient Value Added Intellectual Capital (VAIC) and financial

performance of pharmaceutical companies listed in Tehran Stock Exchange (ROE). Thus, according to the model, the third research hypothesis is confirmed.

Table 5: Analysis of the third main hypothesis.

| | | | | | |
|---------------------------------------|-------------|--------------------|--------------|-------------|---------------------|
| Modified coefficient of determination | 0.926508 | | | | |
| F statistics | 61.23339 | | | | |
| Probability (Prob) | 0 | | | | |
| Watson camera statistics | 1.999572 | | | | |
| Explanatory variable | coefficient | Standard deviation | T-statistics | Possibility | Level of confidence |
| VAIC | 0.961261 | 0.183089 | 5.250228 | 0 | 99% |
| MV | 2.422657 | 0.490335 | 4.940818 | 0 | 99% |
| C | 2.105234 | 5.95408 | 0.353578 | 0.7244 | 99% |

Analysis of secondary hypothesis (H31):

This hypothesis has been raised about the existence of the effect of added value of intellectual capital coefficient including: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA) with Financial performance (standard of ROE) of Pharmaceutical companies listed in Tehran Stock Exchange, and it gets tested using the following model:

$$ROE_{it} = \alpha_i + \alpha_1 VACA_{it} + \alpha_2 VAHU_{it} + \alpha_3 STVA_{it} + \alpha_4 MV_{it} + \varepsilon_{i,t}$$

The results of the test of the secondary hypothesis are presented in Table 6. According to F-statistics and the probability of it can be concluded that the regression equation was significant at 99% confidence level.

Table 6: analysis of the secondary hypothesis.

| | | | | | |
|---------------------------------------|-------------|--------------------|--------------|-------------|---------------------|
| Modified coefficient of determination | 0.917727 | | | | |
| F statistics | 50.6192 | | | | |
| Probability (Prob) | 0 | | | | |
| Watson camera statistics | 1945311 | | | | |
| Explanatory variable | coefficient | Standard deviation | T-statistics | Possibility | Level of confidence |
| VAHU | 0.959407 | 0.629922 | 1.523056 | 0.1309 | not significant |
| VACA | 35.45881 | 4.88867 | 7.253262 | 0 | 99% |
| STVA | 11.48014 | 10.3014 | 1.114425 | 0.2678 | not significant |
| MV | 2.17338 | 0.433146 | 5.017663 | 0 | 99% |
| C | -14.0016 | 7.525475 | -1.86057 | 0.0657 | not significant |

The modified determination coefficient of model indicated the levels of the relevant of independent variables with the dependent variable (ROE). According to test results of possibility of variables, value added capital coefficient (VACA), value added capital coefficient (VACA), has a probability of less than 0.01 so these variable at the confidence level of 99% is significant. However, human capital coefficient (VAHU), and structural capital coefficient (STVA) have a higher probability than 0.05, so this variable is not significant at the 95 percent confidence level. Also variable of (MV) company as a control variable has a probability of less than 0.01 so this variable at the confidence level of 99% is significant. Therefore, considering the significance value added capital coefficient (VACA), among the components of capital it could be argued that there is a significant relationship between value added capital coefficient (VACA) variable, and financial performance of pharmaceutical companies listed in Tehran Stock Exchange (ROE), and there is no significant relationship between human capital coefficient (VAHU), and structural capital coefficient (STVA) variables and financial performance of pharmaceutical companies listed in Tehran Stock Exchange (ROE).

Conclusions and recommendations:

coefficient effect on the value intellectual capital and its components have been examined, since the financial Performance of this research is measured by three criteria including: return on assets (ROA), earnings per share (EPS) and return on equity (ROE), and the coefficient of added value components of intellectual capital consists of three components: value added capital coefficient (VACA), human capital coefficient (VAHU), and structural capital coefficient (STVA), for its overall assessment the three main hypotheses and three sub hypotheses have been proposed and tested. The overall results indicated that all the components of intellectual capital has an positive effect on rate of return on assets (ROA), this components has significant and positive effects on the criteria for earnings per share (EPS) and return on equity (ROE) and value added capital coefficient (VACA), and it is not significant on human capital coefficient (VAHU), and structural capital coefficient (STVA). These results indicate that existence of a generally positive effect of the variable components of intellectual capital on indicators of financial performance, meaning strengthening the intellectual capital components and value added capital coefficient (VACA) can be used to enhance financial Performance. It is recommended to the companies studied that in order to improve the organization's intellectual capital and

consequently increasing the financial performance, a system of support and encouragement for superior minds of employees be established for improving intellectual capital of the organization's physical assets. It is recommended to all organizations and companies that by creating a separate unit within the company or through human resource management, measurement, management and development of intellectual capital as a key resource, in a competitive advantage in the knowledge-based economy help to increase learning, create value and improve the overall performance of the company. And by investing more in this non-financial asset, add more value to the company. Also it is recommended that the standard-setting organizations to consider the role of intellectual capital in improving financial performance, take action on identifying and developing indicators for intellectual capital reporting in a series of reports on the financial statements, this will improve the transparency of financial information and help the decision makers and investors.

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