Examination of the Relationship between Intellectual Capital and Financial Reversion

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In this era ,knowledge based brings up as one of the fields of organizations economical growth which in this case as an organization intangible assets we can name intellectual capital as an effective parameter for competitive advantage because of this basis in knowledge based economy, there is a relationship between an organization success and the ways for managing this rare source of intellectual capital. So nowadays managers, economical capitalists, organizations, governments etc pay especial attention to intellectual capitals. In this project, at first by using market and book values methods we count the values of intellectual capital in stock exchange of Tehran for three years (2007-2009) then we appraise the relationship between intellectual capital and revenue of pharmaceutical and petrochemical companies which are accepted in stock exchange of Tehran.

Field of Research: Management

1. Introduction

The appearance of modern economy which is based on information and knowledge caused more attentions to intellectual capitals. researchers and experts pay attention to revenue of intellectual capital as a tool value for valorization of companies(Pew Tan Hong et 2007).

The first researches for intellectual capitals according to Machlup studies has been done in 1962 by Galbraith who believes that intellectual capital is something higher than mind and it also includes mental activity.

Another definition for intellectual capital has defined by Hall in 1992 which says : intellectual capital can be classify to assets (like commercial brand) or skill (like know-how of personnel and organizational culture).

In 1996, Brooking defined intellectual capital to combination of four parts which are consist of : market, human, mental and substructure assets.

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Bonits et al in 1999 define intellectual capital as a conceptual which classify all intangible resources and internal communications.

The other definitions can be presented by Malon who says: intellectual capital is an organization extensive knowledge and its completely unique for each organization and it allows each organization to coordinate itself with changing conditions so intellectual capital is an intangible asset. This asset include the knowledge and experience of skilled workers to gain competitive advantage for companies through the use of some creative strategies (Robert G,2009).

At present, many executives and government officials believe that intellectual capitals show the fundamental value which generally guarantees prosperous future for the company and also for the community. intellectual capitals enable companies to create the value of productivity which has a positive impact on their market and performance. However, intellectual capital is still rarely found in corporate balance sheets and it conflicts with the idea of knowledge-based economy which knowledge and intellectual capital have the highest level of importance among concentrated companies (Bram Boekestein,2009).

Therefore, achieving competitive advantage and organizational survival depend on the application of knowledge assets and the effects of these assets based on the value and benefits for the organization are measured which is the purpose of this study.

2. Literature Review

In 2008,a research was conducted by Pirjo which caused understanding of intellectual dynamism and he examined 51 companies from 2000 to 2005. the purpose of this analysis depended on the relationship between intellectual capital and GNP growth. results showed that the impacts of intellectual capital have important effects on economic growth of different levels of economic (Pirjostahle, 2008).

In 2007, Bramhandkar et al examine the impact of intellectual capital on performance of 139 pharmaceutical company in their study and the results indicate a significant relationship between intellectual capital components and the operation of companies.

In 2007, Rude et al concentrate on the effect of intellectual capital components on financial performance in the hospitality industry in slovenia. The results show a significant and positive relationship between intellectual capital components and financial performance in this industry and also among the components, correlation capital has greater impact and coefficient on financial performance of company.

In 2007, Appuhami examine the components of intellectual capital on corporate performance of companies in insurance industry. the results show the significant relationship between the individual components of intellectual capital and corporate performance of companies.

In 2006, Chu et al examine the relationship between the components of intellectual capital with operation of technical research institute of advanced industrial technology (ITRI) and concluded that there is a positive relationship between the components of intellectual capital and corporate performance of companies and increase of intellectual capital subjects to the process of creating value and strategic reserve of them in organizations.

In 2004, Chen et al in their study defined a model to measure intellectual capital based indicators of quality. In their study, intellectual capital divided into four parts and qualitative indicators for each of them were introduced and approved and then by determining the results they understand that there is a significant relationship between the components of intellectual capital and company performance.

Pew Tan et al,2007 peruse the relationship between intellectual capital and financial performance in Singapore stock according to three indicators which are : earning per share, rate of return on equity and the annual rate of return. Results showed that there is a positive relationship between intellectual capital and financial performance indicators and significant difference between intellectual capital coefficients in different industries.

Kamath,2008 showed that among the components of intellectual capital, human capital has a major impact on profitability, efficiency and the value of pharmaceutical companies in India.

3. The Methodology and Model

In this study, the main hypothesis of the study is that : there is a relationship between intellectual capital and performance of the companies listed in Tehran stock exchange.to determine the relationship, we explain three sub-hypothesis which are :

The first sub-hypothesis : there is a positive relationship between intellectual capital and return on equality firms accepted in Tehran stock exchange.

The second sub-hypothesis : there is a positive relationship between intellectual capital and earning per share of listed companies in Tehran stock exchange.

The third sub-hypothesis : there is a positive relationship between intellectual capital and return on total assets of listed companies in Tehran stock exchange.

This study has a practical nature and with a descriptive format explain the correlation between variables. Since in this study , we seek to examine the relationship between the significant variables so we used the multiple regression method in this case.

Explanation of research models and methods of measuring the variables :

To determine the intellectual capital as one of the variables we use this formula:

MB = MV-BV and ***IC = MV-BV***
In this case MB equals with Market Value and BV equals with Book Value.
Intellectual Capital = Market Value - Book Value
Book Value = Asset - Debt
Market Value = Daily value of stock price

Return on equity (ROE): its an important criterion to show earnings per share which we count it by dividing the company's net profit (income) to equity. by knowing that amount we can see that how much profit per equity unit over a year has resulted. Indeed, return on equity expresses a ratio of profit ability for the company.

The return on assets: it measures the profits to total assets. In fact, the return on assets express a profit for the company. This ratio is prepare for showing the power of company profitability than total book value of assets.

In this study, intellectual capital variables and growth rate of intellectual capital is considered as the independence variable in different industries and outcome measures of financial performance are categorised in three groups which are : return on equity, investment and earning per share.

Considering the above mentioned items, in this research we seek to answer the following questions:

1. What are the ways to measure intellectual capital?
2. What is the relationship between intellectual capital and corporate performance as a criterion for assessing the value of intellectual capital?

The research objectives, statistical society, sampling and the sample size :

The purpose of this research is studying the relationship between intellectual capital and financial returns in the pharmaceutical and petrochemical companies in stock exchange. Thirty eight (38) related companies which are listed in Tehran stock exchange from 2007 to 2009 form the statistical society of this research. We choose companies listed on stock exchange because:

A) Existing various companies which are active in various pharmaceutical and petrochemical industries.
B) Availability of full data and information of these companies.
C) Having the minimum organizations requirements (credit) in order to being accept in Tehran stock exchange

4. The findings

The results of first sub-hypothesis testing from the first main hypothesis:
Dependent variables of ROE, Intellectual capital as an independent variable and Regression coefficients of equation.

Model	Not Standardized Coefficients		Standardized Coefficients	circumstantial evidence (t)	Significant Level
	B	Std.Error			
Constant value	1.992	.056		35.684	0.000
Intellectual capital	2.768E-7	0.000	0.548	3.652	0.001

The regression coefficients obtained in the equation shows that, by increasing per unit in Intellectual capital, return on equity will increase the size of 0.458 and the zero assumption

of significant level will be fail (sig = 0.000<0.05) and the correlation will be meaningful so with 95% confidence level, the first sub-hypothesis that there is a relationship between return on equity and Intellectual capital will be approved.

The results of second sub-hypothesis testing from the first main hypothesis:
Analysis of variance with independent variables of intellectual capital per share

Model	Sum of Square	Degrees of Freedom	Mean Square	circumstantial evidence (f)	Significant Level
The model of variable changes dependent to independent variables	0.434	1	0.434	0.514	0.479
The model of variable changes dependent to random factors	25.323	30	0.844		
sum	25.757	31			

After considering the results, it becomes clear that the amount of P-value is less than 5% (sig=0.479<0.05).by considering the above table its clear that there is a linear relationship between the dependent variable and independent variable.

Note that in the test of linear relationship between intellectual capital and income, there is not a any linear relationship between the variables so the researcher's claim is not approved.

The results of third sub-hypothesis testing from the first main hypothesis:
Regression equation coefficients for Intellectual capital growth rate as an independent variable and dependent variable is return on assets.

Model	Not Standardized Coefficients		Standardized Coefficients	circumstantial evidence (t)	Significant Level
	B	Std.Error			
Constant value	16.575	2.383		6.956	0.000
Intellectual capital	4.329E-6	0.000	0.376	2.402	0.022

The regression coefficients obtained in the equation shows that, by increasing per unit in Intellectual capital, annual income shares will increase the size of 376 and the zero assumption of significant level will be fail (sig = 0.022<0.05) and the correlation will be meaningful so with 95% confidence level, the first sub-hypothesis that there is a relationship between annual income shares and Intellectual capital will be approved.

5. Conclusions

By paying attention to the result of this research and hypothesis testing we can offer the following suggestions:

1. According to the outputs, we can use the results of this research for planning, implemented in various sectors of related industries and helping the shareholders for improving their performance in stock who can benefit from its advantages.
2. According to the results of the research which show a positive and significant relationship between intellectual capital , return on equity and also return on assets we can attract the opinions of investors and managers to pay more attention to capabilities, having knowledge levels and appropriate organizational structure in order to achieve greater efficiency.
3. According to the relationship between intellectual capital with investment and equity, the necessity of reflecting such assets in the financial balanced sheets of companies have been evident over the past. In other words submitting full financial information in accounting financial system will determine true values of organizations.

Here we have some suggestions for future researches :

- The effect of intellectual capital on employee satisfaction.
- The effect of intellectual capital on treatment of shareholders.
- The effect of intellectual capital on components of managers decision.
- Studying the issues and problems to enhance the intellectual capital and providing guidelines for establishing this system in organizations.
- Studying influencing factors on intellectual capital for investors who really like to use the experiences of successful companies.

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