

Survey of intellectual capital and financial performance of companies in TSE

Ghasem Ghasemi¹, Reza Tehrani²

1: Department of Accounting, Islamic Azad University-Sabzevar Branch, Sabzevar, Iran and Ph.D. student in National University of Tajikistan (Corresponding Author)

2: Department of Accounting, Islamic Azad University-Sabzevar Branch, Sabzevar, Iran
ghasemighasemi14@yahoo.com

Abstract: In a knowledge-based organization, where, knowledge forms a large part of the amount and quality of organization's profitability, traditional accounting methods, which are based on tangible assets and information of previous operations of the organization, are incapable of valuing intellectual capital as their most valuable assets. Therefore, the intellectual capital approach is the most comprehensive for organizations who want to know their profitability capacities better. The fundamental importance of this study is the lack of intellectual capital items in the financial statements of the companies as well as a huge gap between book value and market value. In the past, tangible assets had higher importance but today, large part of organizations' assets are intangible assets thus, in today's economy, organizations success depend on the way of managing these assets.

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1. Introduction

Change in business environment from an industrial era to the new economy has transformed the corporate value creation process and strategy, particularly for companies in non-traditional industries. Potential for creating competitive advantage and long-term corporate value, now lies more importantly in effective management of intangibles not reported in financial statements, namely, intellectual capital (IC), than on tangible assets (Daley, 2001; García-Ayuso, 2003; Guthrie, Petty & Johanson, 2001; Petty & Guthrie, 2000). Commensurate with the changes in the corporate value creation process, traditional managerial reporting systems become inadequate in providing decision-useful information to internal stakeholders due to its limitedness in identification and measurement of IC in organisations (Ashton, 2005; Bornemann & Leitner, 2002; Stewart, 1997). Consequently, we observe a temporal decline in the informativeness of financial information (Lev & Zarowin, 1999) and an increase in importance of information on intangible assets for valuing companies (Aboody & Lev, 2000; Amir & Lev, 1996; Canibano, García-Ayuso & Sanchez, 2000; García-Ayuso, 2003; Hermans & Kauranen, 2005; Ittner & Larker, 1998; Pike, Rylander & Roos, 2001)

We're getting into a knowledge-based society where the main economic sources are not capital, labor, natural resources and so on but, is knowledge. The 21st century is the century of knowledge-based economy.

Restrictions of access to physical resources in the organizations have emerged new approaches in

the development of non-physical facilities and value producing procedures in order to improve and enhance product/service.

Prior to knowledge-based economy, the industrial economy was dominant. In industrial economy, the wealth production factors were a series of physical and tangible assets such as land, labor, money, machinery, and so on. In this economy, the use of knowledge as a production factor has a little role but in the knowledge-based economy, knowledge or intellectual capital has more importance than tangible assets in wealth production. In this economy, intellectual assets especially human capital are regarded as most important assets and organization's potential success depends on intellectual capabilities rather tangible assets.

Today, the intangible aspect of the economy is based on intellectual capital and its first and original material is knowledge and information. Organizations, in order to participate in the today's market in any form, require information for and knowledge to improve their performance. Studies indicate that, 60 to 75 percent increase in the value of intellectual capital and intangible assets in share prices of companies. In other words, one can say that, today, intellectual capital management will lead organization to further success in the future of competitive markets.

Hence, the need to use all the available capacity of the organization including: financial capital, physical assets, intellectual capital, professional procedures and work patterns, human capital, information systems, communication networks,

customer supply chain management, knowledge-based properties and so on, is obvious more than ever before. Beside these issues, establishment of optimized frameworks and considering all capabilities to develop efficiency and effectiveness of the assets in order to achieve organizational are being focused in this approach. One of the important aspects of this new approach is paying attention to capacities and values that come forth through a series of organizational resources. These resources cannot be dealt with through applying tradition measures used for financial and physical assets such as physical measures and determining final prices. In fact, with the development of new approaches in the field of economics, the pure concentration on tangible resources as raw materials for value creation in organizations is replaced by simultaneous focus on all of properties such as physical, financial, and nonphysical resources. Through this, modern view in investigating and assessment of organization's assets, in addition to traditional concepts of industrial economy is based on redefining and implementation of these new economic concepts.

In traditional economics, assets are the collection of properties deemed to be involved in the production of goods. In other words, in traditional economy, the concept of fixed assets involves buildings, equipment, materials, machinery, and transport systems that is being used in the production process and will not change unless by depreciation.

The first efforts in the field of concepts of intellectual capital are beholden to works of Fritz Machlup in 1962. However, in a historical view, the invented the concept of intellectual capital is attributed to economist John Galbrays in the year 1969. Although, in this regard, we must mention the efforts of James Tobin in the second half of past century who had first introduced Tobin q ratio in order to examine the performance of organization's intellectual capital. As a result of these efforts, the literature on intellectual capital and organizational development was on track quickly. Nevertheless, through a more accurate investigation one can say that, the concept of intellectual capital attracted the theorists and researchers since eighties and was widely attracted by organizations from nineties.

The components of intellectual capital in the view of Edvinsson and Mallon are as following:

- Human capital
- Customer capital
- Structural capital
- Organizational capital
- Processing capital
- Innovation capital

In this view, the organizational capital is the system and philosophy of the organization aimed to use organizational capabilities. The processing capital includes techniques, procedures, and programs that serve to implement and improve service and product distribution systems. Innovation capital consists of assets related to intellectual property and intangible infrastructures. Intellectual property, itself, consists of rights and privileges such as copyright and trade mark and intangible infrastructures.

The simple definition of intellectual capital is the difference between market value and book value of assets of a company.

Intellectual capital consists of that part of companies' capital or assets which is based on knowledge and is owned by the company. Therefore, it is a raw material and economic factor of organization's life. Intellectual capital as knowledge, experience, technical comment and software assets is defined beyond financial and physical assets. According to the definition, intellectual capital can also include knowledge itself (which has been transformed to intellectual property of a company) or the final result of its transfer process. Items such as patents, copyright, and trade mark can be used to evaluate intellectual capital for accounting purposes. Intellectual capital is the storage of the existing knowledge in a particular area of organization and is a tool for understanding the knowledge transformation process over the time.

One of the definitions of intellectual capital is provided by OECD which explains intellectual capital as economic value of two non-tangible groups of assets of a company:

1. Organizational capital (structural)
2. Human capital

Organizational capital is associated with issues such as ownership of software systems, supply and distribution networks.

Human capital is associated with internal and external human resources (suppliers and customers).

Skandia- a Swedish insurance company- defined the element of intellectual capital as that part of human capital which still remains in the organization even after human resources went to their houses (Edvinsson, & Mallon, 1997).

Andro Krengi (2000) states that: The only irreplaceable capital that an organization possesses is the knowledge and the ability of its employees.

Burgman et al, (2005) define this type of asset as a property owned by the organization which creates value for it and is not entered in traditional balance sheet as a physical and financial asset.

M Vall man (1996) a member of SEC defines intellectual capital as assets that, nowadays, are

valued zero in the balance sheets. These assets include:

- The intellectual power of individuals,
- Brand,
- Trademarks, and

Assets registered in the accounting records by historical cost of assets, but their value has increased over the time (Mojtahedzadeh, 2009, p2).

Intellectual Capital is proposed early by Galbraith (1969), he states that the intellectual capital indicate not only the knowledge and intelligence but also the use of mental behavior. The intellectual capital can be used to explain the difference between firms' market value and book value. Stewart (1997) states that, the intellectual capital is the summary of knowledge and ability everybody can bring the competition advantage to firms. The materials, such as knowledge, information, technology, intelligence property, experience, organizational learning ability, group communicate mechanism, customer relation and brand status...etc., consist of the intellectual capital and can used for creating the wealth for firms separately, so they are essentially different from tangible assets that are known by firms, such as land, factory, equipment and cash...etc. Edvinsson (1997) proposes three basic essence of the intellectual capital: (1) Intellectual capital is the supplement of financial report, not the affix; (2) The intellectual capital is the non- financial capital, represent hidden gap between market value and book value; (3) Intellectual capital is similar to stockholder's equity and lend from shareholder, customer, staff and other relation people. Petrash and Bukowitz (1997) defines the intellectual capital as being valuable but the assets without entity, or derive from procedure, system, and organization culture, such as brand, personal knowledge, intelligence property and organization knowledge that can impel enterprises to create value.

Edvinsson and Malone (1997) divides firm's value into financial capital and intellectual capital, and the intellectual capital is divided into human capital and structure capital and acts as the cause-effect relation and complementary between the two capitals. Then academia and practice divide structure capital into customer capital (or relation capital) and organizational capital (or structure capital) (Bontis et al., 2000). The development of the knowledge economy has been brought to public attention, in order to emphasize the importance of innovation; the organizational capital is divided into innovative capital and procedure capital (Bukh et al., 2001, Wu Sze-Hua, 2001). The composition structure of firm's value is presented as Figure 1.

Stewart (1997) states that the intellectual capital is the summary of knowledge and ability that

everybody can bring the competition advantage to enterprises, and divide the intellectual capital into human capital, structure capital and customer capital. The human capital includes all staff's knowledge, technology, ability, and experience in firm and interacts with firm's main body, and it is the source of firm's innovation. Secondly, the structure capital is similar to the organization capital of Edvinsson and Malone (1997), it is the inside capital of firms, although the structure capital is different from human capital, it will create the value of firm's capital, such as production procedure and internal data of firms... etc. The structure capital comes from two directions, which is the file proportion about firms' internal knowledge and the storage value of firms' special knowledge separately. The storage value of knowledge is the market value, such as skill (exclusive plaster), marketing tool (copyright, brand, license, advertisement, package design, and registered trademark), technological knowledge (database, manual, the standard of product quality, information system), etc... It can share knowledge, convey knowledge, and give play to the effect of the leverage. Finally, relation capital means the relation degree among the firm and customer, supplier and other outside organization or individual to concern the capital.

Ohlson (1995) proposes the residual income valuation model (RIV), in which the market value of firm can be determined by book value, discounted value of expected future abnormal earnings and other information. Stern Stewart Company maintains that the Economic Value Added (EVA®) is to evaluate the firm's market value directly in a way similar to residual income, which is a financial performance measure integrating accounting and economic concepts. Some accounting items in the financial statements are adjusted to present the firm's whole economic value, and shareholder's value is increased only after its earnings exceed its cost of capital.

Roos, Edvinsson, and Dragonetti (1998) argue that firm's value is determined by traditional physical, financial capital and intangible intellectual capital. Lev (2001) suggests that the physical and financial assets of firm can only generate normal earnings; abnormal earnings are created through the development of intangible assets. Lev states that if the intellectual capital of knowledge-intensive firms is not properly accounted for in the financial statements, their cost of capital will be over charged, their value will be systematically undervalued, which will hinder the investment and growth of those firms. In this study, our valuation model will adjust accounting earnings for equivalent equity reserves and cost of equity capital; in other words, we will use EVA® to reflect the economic value of the firm.

The major contribution of our study is that in our valuation model, firm value is mainly.

Tsai and Hua (2004) investigate the relevance of intellectual capital and stock price for the high-tech and electronic firms listed on Taiwan Stock Exchange from 1999 to 2003, and the research results show that the explanatory ability of stock price by the firm's book value and intellectual capital is more than the firm's book value and accounting earning. Li (2001) examines the relevance among intellectual capital and valuable driving and firm's value for the information and electronic industry listed on Taiwan Stock Exchange from 1997 to 1999, the research results show the firm's value is positive correlation with R & D expenses, administrative expenses, administrative expenses per staff and the quantity of new patent right. Chen (2004) show firm's stock price is positive correlation with advertising expense per share (about customer capital), R & D expenditure proportion and the quantity of patent right(about innovation capital), administration expense per staff(about procedure capital), but negative correlation with staff's age(human capital).

2. Material and Methods

In terms of purpose, this research is an applied research. In terms of methodology our method is based on correlation.

In this research, we have used library studies including books, articles and foreign and domestic journals to collect research literature and the data required to test the hypotheses.

The statistical population consists of all companies listed in Tehran Stock Exchange. The reason to choose these companies as statistical population was the ease of access to their audited financial statements as well as their stock returns in different periods.

Concerning the 7-year period of study (from 2005 to 2011), we have been selected companies which listed in Tehran Stock Exchange at least in the beginning of 2005 with the end of fiscal year in Esfand, 29. The sampling method was step by step with systematic elimination.

In this study, the companies that have selected that have all of the following conditions:

1. Listed in Tehran Stock Exchange before 2005.
2. Their fiscal year ends at Esfand 29.
3. Their shares must be traded at the beginning and end of their fiscal year.
4. Have presented their financial statements to bourse in order to study at the end of fiscal year.
5. In the studied period, the companies should not have operating losses in the audited

profit and loss accounts as well as after considering taxes.

Therefore, among all companies listed in Tehran Stock Exchange, 73 companies have been selected according to aforementioned conditions.

3.1. Research variables

Independent variable:

In this study, the intellectual capital along with its components including structural, human and physical capital is regarded as independent variables. Dependent variables:

In this study, the dependent variable was the financial performance which indices are based on EVA, MB, Tobin q, ROA, ASR, P/E, ATO, ROE.

Control variable:

In order to control firm size on variables, firm size is introduced as control variable.

2.2. Research Hypotheses

1. There is a significant relationship between components of intellectual capital and indicators of market value as indicator of company's financial performance.
 - a) There is relationship between components of intellectual capital and the ratio of market capitalization to book value of common stocks (MB).
 - b) There is relationship between components of intellectual capital and Tobin q ratio of market value indicators.
 - c) There is relationship between components of intellectual capital and the ratio of market value of shares to return on shares (P/E).
2. There is significant relationship between components of intellectual capital and profitability ratio (ROA) as an indicator of financial performance.
3. There is significant relationship between components of intellectual capital and asset turnover ratio (ATO) as an indicator of financial performance of company.
4. There is a significant relationship between components of intellectual capital and return on capital as an index of company's financial performance.
 - a) There is a significant relationship between components of intellectual capital and return on equity (ROE) index of company's return on capital.

- b) there is relationship between components of intellectual capital ASR index of Return on capital
- There is a significant relationship between components of intellectual capital economic value added (EVA) as a modern criterion of company's financial performance.
 - There is significant relationship between firm size, intellectual capital, and financial performance.

The multiple regression models for the hypotheses are as follows

- $M B_i = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$
- $Tobinq = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$
- $P/E = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$
- $ROA_i = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$
- $ATO_i = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$
- $FP_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + \beta_4 FSIZE_{it} + e_{it}$
- $ROE_i = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$
- $ASR = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$
- $EVA = \beta_0 + \beta_1 HCE_i + \beta_2 SCE_i + \beta_3 CEE_i + \beta_4 FSIZE_i + e_i$

3. Results

First main hypothesis: there is a significant relationship between components of intellectual capital and indicators of market value as indicator of company's financial performance.

The first main hypothesis is divided into three sub-hypotheses:

Testing first sub-hypothesis

There is relationship between components of intellectual capital and the ratio of market capitalization to book value of common stocks (MB).

The results showed that, the correlation coefficient between the market value to book value and structural capital, SCE, in 5 years, with physical capital, CEE, in 7 years is significant and the direction of relationship in all cases is positive, but has no significant relationship with human capital variable (HCE) of intellectual capital. Therefore, the null hypothesis (H0) is rejected and the H1 hypothesis indicating the presence of correlation is confirmed.

Testing second sub-hypothesis: there is relationship between components of intellectual capital and Tobin q ratio of market value indicators.

According to the results, the correlation coefficient of Ln(Tobin q) is significant with structural capital (SCE) in 6 years and is significant with physical capital (CEE) in 7 years and the direction of relationship is positive in all cases but have no relationship with human capital (HCE).

Testing third sub-hypothesis: there is relationship between components of intellectual capital and the ratio of market value of shares to return on shares (P/E).

In order to test this hypothesis the correlation coefficient was used.

According to results, the correlation coefficient between Ln(P/E) and structural capital (SCE) in 1 year is significant with human capital (HCE) in 1 year and the direction of relationship is negative and thus, there is no significant relationship with CEE. Moreover, concerning that, Sig. is not equal to 0.000, therefore, the H0 hypothesis is confirmed and H1 is rejected, indicating the rejection of third hypothesis.

After testing secondary hypotheses, we will test the first main hypothesis:

There is significant relationship between components of intellectual capital and indicators of market value as company's financial performance index.

According to above secondary hypotheses and their results, the indices of correlation coefficient, determination coefficient, and significance level, the Pearson correlation coefficient shows that, components of intellectual capital (especially physical and structural capital) have significant relationship with book-to-market and Tobin q ratios so that, the coefficient of determination for the mentioned relationships is equal to 0.319 and 0.470, respectively, indicating an acceptable explanation of the financial performance indicators related to market value by components of intellectual capital. According to these statistical results, the first main hypothesis is confirmed.

Testing second hypothesis

Second main hypothesis: there is significant relationship between components of intellectual capital and profitability ratio (ROA) as an indicator of financial performance.

Pearson correlation matrix was provided to show results. Ln(ROA) is significant with the variables of structural capital (SCE) and physical capital (CEE) in 7 years and the direction of relationship in all cases is positive and there is no significant relationship with HCE.

Testing third hypothesis

Third main hypotheses: there is significant relationship between components of intellectual capital and asset turnover ratio (ATO) as an indicator of financial performance of company.

Pearson correlation matrix was provided to show results. Asset turnover ratio (ATO) is significant with the variable of structural capital (SCE) in 1 year, is significant with physical capital (CEE) in seven years, and is significant with human capital (HCE) in 2 years. The direction of relationship is positive with CEE and is negative and inverted in other cases.

Pearson correlation matrix is shown in the above table. Ln(ROA) is significant with the variables of structural capital (SCE) and physical capital (CEE) in 7 years and the direction of relationship in all cases is positive and there is no significant relationship with HCE.

Testing fourth hypothesis

Fourth main hypothesis: there is a significant relationship between components of intellectual capital and return on capital as an index of company's financial performance.

This hypothesis is divided into two sub-hypotheses.

First sub-hypothesis: there is a significant relationship between components of intellectual capital and return on equity (ROE) index of company's return on capital.

The Pearson correlation matrix showed that, ROE is significant with structural capital (SCE) and physical capital (CEE) in 7 years and is significant with human capital in 1 year.

According to results, the probability of F is equal to 0.000 which is lower than 0.05, therefore, the null hypothesis is rejected.

Second sub-hypothesis: there is relationship between components of intellectual capital ASR index of Return on capital.

The Pearson correlation matrix was provided showing that, ROE is significant with structural capital (SCE) in 1 year and is significant with physical capital (CEE) in 7 years and is significant with human capital (HCE) in 4 year. The direction of relationship is positive except for 1 year in CEE which is negative. Therefore, H_0 hypothesis is accepted and H_1 is rejected.

According to the results, the probability of F is equal to 0.000 which is lower than 0.05, therefore, the null hypothesis is rejected.

According to the results presented in the above, one can see that, component of intellectual capital (especially physical and structural capital) have significant relationship with indicators of return on capital so that, the determination coefficient for ROE is 0.79 indicating the proper explanatory power of

components of intellectual capital for return of capital. Therefore, the first main hypothesis is accepted.

Testing fifth main hypothesis

Fifth main hypothesis: there is a significant relationship between components of intellectual capital economic value added (EVA) as a modern criterion of company's financial performance

The Pearson correlation matrix showed that, ROE is significant with structural capital (SCE), human capital (HCE), and coefficient of intellectual capital but is not significant with physical capital (CEE).

Testing sixth main hypothesis

Sixth main hypothesis: there is significant relationship between firm size, intellectual capital, and financial performance.

Based on the statistical output the variable of firm size has a significant relationship with indicators of financial performance excluding the asset turnover ratio and it can be concluded that, there is positive and significant relationship between firm size, indicators of financial performance, and other components of the intellectual capital in the multiple regression model.

According to the analyses presented above the summary is as follows.

The first main hypothesis: There is a significant relationship between components of intellectual capital and indicators of market value as indicator of company's financial performance.

The first sub-hypothesis: There is relationship between components of intellectual capital and the ratio of market capitalization to book value of common stocks (MB).

According to the above results, the correlation coefficient between the components of intellectual capital and market-to-book value in the model is 0.565. Concerning the coefficients of F and T and their significance level there is a positive and significant relationship between them and intellectual capital explains 32% of the changes of market-to-book value.

In addition, considering the efficiency coefficient of physical and structural capital had the highest coefficient (2.01 and 0.87, respectively) in the regression equation, therefore they have more explanatory power than human capital component.

The second sub-hypothesis: There is relationship between components of intellectual capital and Tobin q ratio of market value indicators.

According to the above results, the correlation coefficient between the components of intellectual capital and Tobin q in the model is 0.686. Concerning the coefficients of F and T and their significance level there is a positive and significant relationship

between them and intellectual capital explains 47% of the changes of market-to-book value.

In addition, considering the efficiency coefficient of physical and structural capital had the highest coefficient (1.56 and 0.6, respectively) in the regression equation, therefore they have more explanatory power than human capital component.

The third sub-hypothesis:

There is relationship between components of intellectual capital and the ratio of market value of shares to return on shares (P/E).

According to the above results, the correlation coefficient between the components of intellectual capital and P/E in the model is 0.15. Concerning the coefficients of F and T and their significance level there is a positive and significant relationship between them and intellectual capital explains 38% of the changes of market-to-book value.

In addition, considering the efficiency coefficient of physical and structural capital had the lowest coefficient (-0.651 and -0.001, respectively) in the regression equation, therefore they have less explanatory power than human capital component.

The main hypothesis of the first: There is a significant relationship between components of intellectual capital and indicators of market value as indicator of company's financial performance

According to the results of three secondary hypotheses, confirming first and second and rejecting the third, it can be concluded that, the H_0 hypothesis is rejected and H_1 is confirmed indicating that, there is positive relationship between the indicators of market value and intellectual capital.

The second main hypothesis: There is significant relationship between components of intellectual capital and profitability ratio (ROA) as an indicator of financial performance.

According to the above results, the correlation coefficient between the components of intellectual capital and profitability in the model is 0.318. Concerning the coefficients of F and T and their significance level there is a positive and significant relationship between them and intellectual capital explains 10% of the changes of market-to-book value.

In addition, considering the efficiency coefficient of physical and structural capital had the highest coefficient (2.19 and 1.82, respectively) in the regression equation, therefore they have more explanatory power than human capital component.

The third main hypothesis: There is significant relationship between components of intellectual capital and asset turnover ratio (ATO) as an indicator of financial performance of company.

As the results show, the significance level of correlation coefficient and the significance level

between components of intellectual capital and asset turnover ratio is more than the acceptable 5%, and regarding that, the regression model for human and structural capital is not significant, the H_0 hypothesis is accepted and the third main hypothesis is rejected. Therefore, it can be concluded that, there is no significant relationship between intellectual capital and asset turnover ratio. Moreover, the coefficient of determination (R^2) is equal to 0.135, which indicates there is no balance in explanatory power of components of intellectual capital to explain asset turnover ratio.

The fourth main hypothesis: There is significant relationship between firm size, intellectual capital, and financial performance.

According to the results, models can explain the relationship between components of intellectual capital, financial performance, and firm size. In addition, the significance of correlation between firm size and financial performance indicators and intellectual capital is less than 5%. Therefore, one can say that, firm size can explain the relationship between intellectual capital and financial performance.

Fourth main hypotheses: There is a significant relationship between components of intellectual capital and return on capital as an index of company's financial performance.

The fourth main hypothesis was divided into two sub-hypotheses:

First sub-hypothesis: There is a significant relationship between components of intellectual capital and return on equity (ROE) index of company's return on capital.

According to the above results, the correlation coefficient between the components of intellectual capital and ROE in the model is 0.889. Concerning the coefficients of F and T and their significance level there is a positive and significant relationship between them and intellectual capital explains 79% of the changes of ROE.

In addition, considering the efficiency coefficient of physical and structural capital had the highest coefficient (0.353 and 0.534, respectively) in the regression equation, therefore they have more explanatory power than human capital component.

Second sub-hypothesis: there is relationship between components of intellectual capital ASR index of Return on capital.

According to the results the significance level of correlation coefficient between components of intellectual capital and return on equity ASR is lower than 0.509 indicating that, H_0 is accepted and H_1 is rejected. Therefore, there is no significant relationship between intellectual capital and ASR.

Fourth main hypothesis: There is a significant relationship between components of intellectual capital and return on capital as an index of company's financial performance.

According to the results of sub-hypotheses, accepting the first and rejecting the second, we can say that, the null hypothesis is rejected and H_1 is accepted. Therefore, there is significant relationship between intellectual capital and ASR.

The fifth main hypothesis: There is a significant relationship between components of intellectual capital economic value added (EVA) as a modern criterion of company's financial performance.

4. Discussions

The author, in this work, concluded that, there is According to the above results, the correlation coefficients between the components of intellectual capital and ROE in the models are 0.557 and 0.543, respectively. Concerning the coefficients of F and T and their significance level there is a negative and significant relationship between them and intellectual capital explains 31% of the changes of ROE.

In addition, only human capital has a significant effect on EVA.

The sixth main hypothesis: There is significant relationship between firm size, intellectual capital, and financial performance.

According to the results, excluding the regression model of ROE, other models can explain the relationship between components of intellectual capital, financial performance, and firm size. In addition, the significance of correlation between firm size and financial performance indicators and intellectual capital is less than 5%. Therefore, one can say that, firm size can explain the relationship between intellectual capital and financial performance.

Corresponding Author:

Ghasem Ghasemi

Department of Accounting, Islamic Azad University-Sabzevar Branch, Sabzevar, Iran and Ph.D. student in National University of Tajikistan (Corresponding Author)

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