

The relationship between grow rate of intellectual capital and future profitability of productive companies that accepted in Tehran stock exchange

¹Roqayeh Talebi, ²Mansureh Shajari, ³Masoud Ghorban hosseini, ⁴Naser Arab

¹Department of Accounting, Saveh Branch, Islamic Azad University, Saveh, Iran.

²Department of Accounting, Tehran Branch, Islamic Azad University, Tehran, Iran

³Department of Accounting, Saveh Branch, Islamic Azad University, Saveh, Iran.

⁴Department of Accounting, Saveh Branch, Islamic Azad University, Saveh, Iran.

Abstract: Increasing the stockholders' wealth and explicit prospect of profitability specially is noteworthy for managers. There are various factors involve in companies profitability. Finding these reveal or hide factors and demonstrating their relation with profitability of companies, is a demand from managers and beneficiaries. In recent years, it is talk about a latent resource in companies as intellectual capital and some patterns offered for measuring it; then its relation with different items investigated. In this regard, the present research investigate the relation between grow rate of intellectual capital and future profitability of productive companies that accepted in Tehran stock exchange. For this purpose, the return on sales, return on equity, return on asset and circulating capital return, all used for determining the future profitability; and the financial lever and company size used as control variables. The time scale of this research is from 2008 to 2013. and it covers 97 companies. The results of this research show that there is a direct relation between grow rate of intellectual capital and future profitability of companies. In addition, the financial lever as a control variable has a significant coefficient in all hypothesizes. This result obtained from real data for those managers that increasing the wealth and interest for company is a central point in their long and short time goals, so this is a thinkable issue.

Keywords: grow rate of intellectual capital, future profitability, the Tehran Stock Exchange

I. Introduction

By occurrence the information and technological revolution since 1990, the economical pattern of world changed. In modern economy, knowledge as the most important asset superseded the physical and financial assets (Ghlichli & Moshabbeki; 2007). During the age of cost price industry, for acquiring a trade, it needed to assets, factories, equipments and raw materials but during the information age, this is the efficient usage of intellectual properties that will affect the success or lose of a set. Researchers divided the intellectual properties into three main parts: structural capital; customer capital (relational capital) and human capital. The human capital is including knowledge, skills, experience, ability and talents of companies' managers and personnel. The human capital is an important and basic capital that cause to generating the value for company and its financial growth. The structural capital is including culture making, thinking method, process, philosophy, system and database. The customer capital (relational capital) is the company ability for protecting its relation with customers and beneficiaries. In fact, we discuss about non tangible elements that exist and success companies exploited them. Many of researchers offered some solutions for determining the value of intellectual capital and they explored its effect on company performance. Thus, it is necessary that managers be aware from value of this hide capital in company and in their policy making they should consider the important position of intellectual properties regard to increasing the stockholders' worth and company profitability. For reflecting this, in this study we investigated the relation between intellectual properties growth and future profitability of accepted companies in stock exchange of Iran. And by confirming all hypothesizes it found that there is a significant relation between intellectual capital growth rate and future profitability of companies in our statistical society.

II. The theoretical basics of research

Intellectual capital implications

Always the intellectual capital implications were ambiguous and different definitions used for interpreting this concept. The term of intellectual capital firstly introduced by John Kens Galbers in 1969. Many of researchers use some terms such as assets, sources or stimulates of performance stead of capital word. And they replace the intellectual word by terms such as un-sensible, based on knowledge, or non financial. Some jobs such as financial accounting and legal professions have different definitions for this such as fixed non financial assets that haven't physical and objective existence. There are different definitions for intellectual capital that we mention to them in following.

- 1) Stewart (2001) believes that intellectual capital is a collection of knowledge, information, intellectual assets, experience, competition and organizational learning that can be used for creating the worth. In fact, the intellectual capital covers all personnel, organizational knowledge and abilities for creating the added-value and results to continuous competition advantages.
- 2) Bontis (2003) defines the intellectual capital as a collection of non tangible assets (sources, abilities, competition) that are obtained from organizational performance and value making.
- 3) Edvinsson and Malone (1997) define the intellectual capital as “knowledge and information used for work and creating the value”.
- 4) Bontis et al (1999) in their article define the intellectual capital as a reservoir of knowledge that is existing in organization in a special point of time. In this definition, the relation between intellectual capital and organizational learning considered.

The intellectual properties are non competition assets. Unlike the physical properties that only are used for doing one work in a special time, it can use the intellectual properties simultaneously for doing several important works. For example, the customer supporting system can provide the supporting possible for many thousands of customers in a special time. This is one of the most important superior criterions for intellectual capital than physical ones. As profit is a criterion for measuring the management efficiency, the financial flexibility and operational power and used for managerial decision making and other things, thus increasing the profitability is the only goal for stockholders. This viewpoint drives them to reaching this goal.

III. Research history

Zéghal and Maaloul (2010) measured the intellectual capital by added-value index and studied its effect on financial, economical and market value performance of 300 Britain’s companies. For measuring the intellectual capital, they used the intellectual added-value coefficient. The obtained results showed that the efficiency effect of intellectual capital has a positive and significant relation with financial and economical performance, but about market value performance, this relation is significant only for technology industry. Also, it found that there is a negative relation between used capital (physical and financial capital) and economical performance but between this capital has a positive and significant relation with market value and financial performance.

Chang and Hsieh (2011) studied the relation between elements of intellectual capital and financial, operationa and market performances in Taiwan’s stock exchange for electronic industry. They used the balanced added-value coefficient for measuring the intellectual capital. Their results showed that relation between operational performance and used capital is positive but this performance hasn’t any relation with structural and human properties. In addition, the elements of intellectual capital have a negative relation with financial and market performance. The development and research costs have a positive relation with these three performances but intellectual capital has a positive relation only with operational performance.

Maditinos et al (2011) studied the relation between elements of intellectual capital and financial and market performance in Greek’s stock exchange. They used intellectual added-value coefficient for measuring the intellectual capital. Their results show that there isn’t any significant relation between intellectual capital and financial and stock exchange performance and only the relation between human capital and stockholders’ revenue rate confirmed.

IV. Research hypothesizes

In this study for reaching to research hypothesizes, two main and eight sub main hypothesizes were tested.

H1: There is significant relation between intellectual capital and future profitability of accepted companied in Tehran stock exchange.

- 1) There is a significant relation between intellectual capital and next year return on sales of accepted productive companies in Tehran stock exchange.
- 2) There is a significant relation between intellectual capital and next year return on equity of accepted productive companies in Tehran stock exchange.
- 3) There is a significant relation between intellectual capital and next year return on asset of accepted productive companies in Tehran stock exchange.
- 4) There is a significant relation between intellectual capital and next year circulating capital return of accepted productive companies in Tehran stock exchange.

H2: There is a significant relation between intellectual capital growth rate and future profitability of accepted productive companies in Tehran stock exchange.

- 5) There is a significant relation between intellectual capital growth rate and next year return on sales of accepted productive companies in Tehran stock exchange.

- 6) There is a significant relation between intellectual capital growth rate and next year return on equity of accepted productive companies in Tehran stock exchange.
- 7) There is a significant relation between intellectual capital growth rate and next year return on asset of accepted productive companies in Tehran stock exchange.
- 8) There is a significant relation between intellectual capital growth rate and next year circulating capital return of accepted productive companies in Tehran stock exchange.

Research variables

In this research, the intellectual capital growth rate is the independent variable, future profitability ratios (return on sales, return on equity, return on asset and circulating capital return) are the dependent variables and company size and financial leverage is used as control variable.

Independent variable

For calculating the intellectual capital growth rate, firstly the intellectual capital value calculated and its change percent respect to last year value of intellectual capital is considered as intellectual capital growth rate. Different methods suggested for calculating the intellectual capital value that in present study we used the Luthy's method (1998). This relation is as follow:

$$IC = MV - BV$$

Where:

IC: is the intellectual capital value;

MV: is the market value of company shares;

BV: is the book value (stockholders' equity) of company.

In this model time changes of money value is balanced respect to inflation rate in any period, so it can obtain results that are more realistic.

$$IC = \sum_t^T \frac{MV_t - BV_t}{1 + I_{inf_t}}$$

In this model,

IC: is the intellectual capital value;

MV_t : is the market value of company shares in t period;

BV_t : is the book value of company (stockholders' equity) in t period; and

I_{inf_t} : is the inflation rate in t period.

The needed data gathered from valid references so it can rely on obtained results. In fact, this model used due to not reliance on unavailable and subjective data in calculations. These references are:

1. Financial statements that offered to stock exchange by statistical society companies by using the (Rahaward 3.0) software.
2. Company shares value according to stock exchange notice in desired dates.
3. The notified inflation rate by Central Bank.

Finally, the intellectual capital growth rate calculated as follow:

$$\Delta IC_t = \frac{IC_t - IC_{t-1}}{IC_{t-1}}$$

Where:

ΔIC_t : is the intellectual capital growth in t period;

IC_t : is the intellectual capital value in t period and

IC_{t-1} : is the intellectual capital value in the end of t-1 period.

The dependent variables

As mentioned before, four profitability ratios used as dependent variables.

1. Return on sales: The profit-loss ratio after taxing on total sale
2. Return on equity: The profit-loss ratio after taxing on sum of stockholders' equity.
3. return on asset: The profit-loss ratio after taxing on sum of total assets.
4. circulating capital return: The profit-loss ratio after taxing on circulating capital.

In the first hypothesis, the relation between intellectual capital and future profitability and in second hypothesis the relation between intellectual capital growth rate and future profitability investigated.

Control variables

One of the control variables in this research is the company size that measured by normal logarithm of total sale. The other control variable in this research is the ratio of total liability to total asset that used for controlling the ratio of liability and profitability.

Research method

This is a post-event Research. In this research, we investigated those events that normally happened in the last without any intervention by author.

The statistical society and sample of research:

The statistical society include accepted companied in Tehran stock exchange during 2008-2013.

Sampling was done as systematic elimination means that first, a list of all accepted companies in the stock exchange provided and then those companies that hadn't the desired sample conditions eliminated and remaining selected as research sample. The following conditions used for this selection:

1. The company accepted in stock exchange in financial year of 2006.
2. For all selected companies the end of financial year during the considered period should be 20 March, so the considered companies' situation be similar respect to environmental factors related to financial year.
3. The company should not change its financial year during 2006-2013.
4. The company should not be an investiture company or a bank.
5. The book value of company (stockholders' revenue) should not be negative.
6. The needed information should offered completely by companies for 2008-2013.

Based on above conditions, totally 97 companies had these conditions in mentioned period. Table 1 shows the industries grouping and their abundance in statistical sample.

Table1- Grouping the industries and their abundance in statistical sample.

No	Main and sub-main industry	abundance
1	Machines and equipments: machines for road making, loom, agriculture	23
2	Food: livestock feed, diary foods, juices, non meaty foods	17
3	Petroleum products: oil and gas extraction, petroleum products	9
4	Industrial multi-branch: industrial multi-branch	4
5	Basic metals: rolling and foundry, metallic products	18
6	Rubber and Plastic: rubber parts, plastic products, tier and tube	10
7	Other	16
Total		97

Data gathering method

The library and field method used in this study for data gathering. The theoretical basics of study gathered from books, journals and special web sites in accounting field in both Persian and original languages. In addition, the required financial data gathered from central bank and stock exchange web site, weekly reports of stock exchange and for this purpose, we used the Rahaward 3.0 software.

Analyzing and hypothesizes testing method

One of the most important stages of study is the statistical data analyzing. By using the correct and proper statistical methods, it can offer the results. For data analysis, the descriptive statistical data (mean and standard deviation) and deductive data (simple and partial correlationcoefficient, simple and multiple regression models) used. For testing the partial coefficient significance of regression in first and second hypothesizes, we used the t-test and the calculated probability value (p-value) used by SPSS software. The test assumptions are as below:

H₀: There isn't any significant relation between independent and dependent variables.

H₁: there is a significant relation between independent and dependent variables.

If p-value is greater than expected error level ($\alpha=5\%$), the obtained coefficient isn't significant and it can accept the H₀ and otherwise, ($p\text{-value}<\alpha$), the coefficient is significant and H₀ will be rejected. In both hypothesizes for testing the significance of regression equation we used the F-test and p-value by SPSS software. In multiple regression equation if there isn't any significant relation between dependent and independent variables, it should be set all independent variables equal to zero. Concerning to multiple regression model, the analyzed hypothesizes are as below:

H₀: All regression model coefficients are equal to zero.

H₁: Least, one coefficient of regression model isn't zero.

By given reliability level of 95% if F coefficient that obtained from regression equation is greater than F-value in Fisher table, it can reject the H₀ and vise versa.

V. Analyzing the data

Descriptive data

Table 2 offered mean and standard deviation data for research variables (intellectual capital growth rate, return on sales , return on equity , return on asset , circulating capital return, company size, and debt ratio).

Table 2- Descriptive data for research variables

Variable	data	Abundance	mean	standard deviation
intellectual capital growth rate		97	0/1345	0/2145
return on sales		97	0/1802	0/0479
return on equity		97	0/2411	0/5292
return on asset		97	0/1754	0/1457
circulating capital return		97	0/2547	0/3987
company size		97	23/1547	8/248
debt ratio		97	0/9851	0/1842

Deductive data

Results of testing the research hypothesizes by using the simple and separated correlation, simple and multiple regressions are as below.

The first ordered hypothesizes for investigating the relation between intellectual capital and future profitability of companies in statistical society of research:

Hypothesis 1: There is a significant relation between intellectual capital and next year companies’ return on sales .

For testing the first hypothesis, we used the simple correlation model, intellectual capital as independent variable and next year return on sales as dependent variable. In multiple regression equation, the intellectual capital, debt ratio and company size inserted in equation as predictive variables. For controlling the variables, we calculated the partial correlation coefficient. The results of this test offered in table 3.

Table 3- Results that obtained by testing the hypothesis 1.

Model	Variables	α	b	β	p- value	The simple correlation	partial correlation	F
1	intellectual capital	0/101	$6/103 \times 10^{-5}$	0/524	0/001	0/524	0/524	40/431
2	intellectual capital	0/205	$6/17 \times 10^{-5}$	0/358	0/001	0/524	0/478	18/753
	debt ratio		0/063	0/069	0/001	0/064	0/055	
	size		0/018	0/071	0/002	0/168	0/062	

Based on table 3 in first model, the β value for intellectual capital variable without controlling variables is 0.524 and its p-value is 0.001. Thus, according to significance level of 0.05, this hypothesis is rejected, so the intellectual capital has a significant relation with return on sales rate. In second model, nevertheless two controlling variables of debt ratio and company size with p-value=0.001 and $\beta=0.358$ and partial correlation coefficient=0.478, again we see that there is a significant relation between intellectual capital as an independent variable and return on sales rate. Also, the controlling variable of debt ratio (with p-value=0.001 and $\beta=0.069$) and company size (with p-value=0.002 and $\beta=0.071$) have a significant coefficient. Finally, respect to F, controlling variables, the intellectual capital has a significant effect on return on sales rate.

Hypothesis 2: There is a significant relation between intellectual capital and next year companies’ return on equity.

For testing the second hypothesis, we used the simple correlation model, intellectual capital as independent variable and next year return on equity as dependent variable. In multiple regression equation, the intellectual capital, debt ratio and company size inserted in equation as predictive variables. For controlling the variables, we calculated the partial correlation coefficient. The results of this test offered in table 4.

Table 4- Results that obtained by testing the hypothesis 2.

Model	Variables	α	b	β	p- value	The simple	partial	F
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						correlation	correlation	
1	intellectual capital	0/843	$7/11*10^{-4}$	0/174	0/004	0/174	0/174	60/339
2	intellectual capital	0/251	$5/82*10^{-5}$	0/039	0/009	0/174	0/112	26/85
	debt ratio		0/081	0/009	0/048	0/02	0/009	
	size		0/035	0/146	0/007	0/171	0/115	

Based on table 4 in first model, the β value for intellectual capital variable without controlling variables is 0/174 and its p-value is 0.004. Thus, according to significance level of 0.05, this hypothesis is rejected, so the intellectual capital has a significant relation with return on equity rate. In second model, nevertheless two controlling variables of debt ratio and company size with p-value=0.009 and $\beta=0.039$ and partial correlation coefficient=0.112, again we see that there is a significant relation between intellectual capital as an independent variable and return on equity rate. Also, the controlling variable of debt ratio (with p-value=0.048 and $\beta=0.009$) and company size (with p-value=0.007 and $\beta=0.146$) have a significant coefficient. Finally, respect to F, controlling variables, the intellectual capital has a significant effect on return on equity rate.

Hypothesis 3: There is a significant relation between intellectual capital and next year companies' return on asset.

For testing the Third hypothesis, we used the simple correlation model, intellectual capital as independent variable and next year return on asset as dependent variable. In multiple regression equation, the intellectual capital, debt ratio and company size inserted in equation as predictive variables. For controlling the variables, we calculated the partial correlation coefficient. The results of this test offered in table 5.

Table 5- Results that obtained by testing the hypothesis 3.

Model	Variables	α	b	β	p- value	The simple correlation	partial correlation	F
1	intellectual capital	0/112	$5/04*10^{-7}$	0/398	0/003	0/398	0/398	74/412
2	intellectual capital	0/191	$3/58*10^{-7}$	0/278	0/005	0/398	0/356	35/165
	debt ratio		-0/150	-0/174	0/015	-0/161	-0/189	
	size		0/009	0/076	0/054	0/180	0/058	

Based on table 5 in first model, the β value for intellectual capital variable without controlling variables is 0/398 and its p-value is 0.003. Thus, according to significance level of 0.05, this hypothesis is rejected, so the intellectual capital has a significant relation with return on asset rate. In second model, nevertheless two controlling variables of debt ratio and company size with p-value=0.005 and $\beta=0.278$ and partial correlation coefficient=0.356, again we see that there is a significant relation between intellectual capital as an independent variable and return on asset rate. Also, the controlling variable of debt ratio (with p-value=0.015 and $\beta=0.161$) has a significant coefficient and variable of company size (with p-value=0.054 and $\beta=0.076$) has not a significant coefficient. Finally, respect to F, controlling variables, the intellectual capital has a significant effect on return on asset rate.

Hypothesis 4: There is a significant relation between intellectual capital and next year companies' circulating capital return.

For testing the Fourth hypothesis, we used the simple correlation model, intellectual capital as independent variable and next year circulating capital return as dependent variable. In multiple regression equation, the intellectual capital, debt ratio and company size inserted in equation as predictive variables. For controlling the variables, we calculated the partial correlation coefficient. The results of this test offered in table 6.

Table 6- Results that obtained by testing the hypothesis 4.

Model	Variables	α	b	β	p- value	The simple correlation	partial correlation	F
1	intellectual capital	9/248	$3/347*10^{-4}$	0/012	0/035	0/012	0/012	0/085
2	intellectual capital	21/547	$6/95*10^{-4}$	0/080	0/040	0/012	0/008	5/219
	debt ratio		12/3577	0/085	0/006	0/063	0/071	
	size		-4/641	-0/243	0/045	-0/164	-0/178	

Based on table 6 in first model, the β value for intellectual capital variable without controlling variables is 0/012 and its p-value is 0.035. Thus, according to significance level of 0.05, this hypothesis is rejected, so the

intellectual capital has a significant relation with circulating capital return rate. In second model, nevertheless two controlling variables of debt ratio and company size with p-value=0.040 and $\beta=0.080$ and partial correlation coefficient=0.008, again we see that there is a significant relation between intellectual capital as an independent variable and circulating capital return rate. Also, the controlling variable of debt ratio (with p-value=0.006 and $\beta=0.085$) and company size (with p-value=0.045 and $\beta=-0.243$) have a significant coefficient. Finally, respect to F, controlling variables, the intellectual capital has a significant effect on circulating capital return rate.

Based on results of hypothesizes test, there is a significant relation between intellectual capital and future profitability of company and four firstly hypothesizes of research is confirmed. The debt ratio as a controlling variable had a significant coefficient in all four hypothesizes but the company size wasn't significant in third sub-main hypothesis. In the last sub-main hypothesis, there is a similar condition for controlling variable.

The second ordered hypothesizes for investigating the relation between intellectual capital growth rate and future profitability of companies in statistical society of research:

Hypothesis 5: There is a significant relation between intellectual capital growth rate and next year return on sales of companies.

For testing this hypothesis by using the simple correlation model, it considered the intellectual capital growth rate as an independent variable and next year return on sales as a dependent variable. In multiple regression equation, the independent variable of intellectual capital growth rate, the controlling variables of debt ratio and company size included as predicting variables. For controlling the variables, we calculated the partial correlation coefficient. The test results offered in table 7.

Table 7- The regression test results for hypothesis 5.

Model	Variables	α	b	β	p- value	The simple correlation	partial correlation	F
1	intellectual capital	0/185	0/026	0/184	0/001	0/184	0/184	7/457
2	intellectual capital	0/094	0/005	0/07	0/004	0/184	0/196	12/982
	debt ratio		0/112	0/115	0/037	0/095	0/191	
	size		0/062	0/051	0/008	0/021	0/059	

According to table 7, in first model for intellectual capital growth rate without controlling variables, $\beta=0.184$ and p-value=0.001. Thus, respect to significance level of 0.05, the H_0 is rejected. Therefore, intellectual capital growth rate has a significant relation with next year return on sales. In second model due to existence of controlling variables including debt ratio and company size (with p-value=0.004, $\beta=0.07$ and partial correlation coefficient=0.196) again we see that there is a significant relation between intellectual capital growth rate and next year return on sales. In addition, the controlling variable of debt ratio (with p-value= 0.037, $\beta=0.115$) and company size (with p-value=0.002, $\beta=0.051$) have a significant coefficient. Finally, according to F, controlling variables and intellectual capital growth rate, they together have a significant effect on next year return on sales.

Hypothesis 6: There is a significant relation between intellectual capital growth rate and next year return on equity of companies.

For testing this hypothesis by using the simple correlation model, it considered the intellectual capital growth rate as an independent variable and next year return on equity as a dependent variable. In multiple regression equation, the independent variable of intellectual capital growth rate, the controlling variables of debt ratio and company size included as predicting variables. For controlling the variables, we calculated the partial correlation coefficient. The test results offered in table 8.

Table 8- The regression test results for hypothesis 6.

Model	Variables	α	b	β	p- value	The simple correlation	partial correlation	F
1	intellectual capital	0/745	0/312	0/658	0/012	0/658	0/658	50/446
2	intellectual capital	0/462	0/064	0/613	0/009	0/658	0/457	25/487
	debt ratio		0/455	0/451	0/030	0/404	0/417	
	size		0/471	0/412	0/034	0/439	0/486	

According to table 8, in first model for intellectual capital growth rate without controlling variables, $\beta=0.658$ and p-value=0.012. Thus, respect to significance level of 0.05, the H_0 is rejected. Therefore, intellectual capital growth rate has a significant relation with next year return on equity. In second model due to existence of

controlling variables including debt ratio and company size (with p-value=0.009, $\beta=0.613$ and partial correlation coefficient=0.457) again we see that there is a significant relation between intellectual capital growth rate and next year return on equity. In addition, the controlling variable of debt ratio (with p-value= 0.030, $\beta=0.451$) and company size (with p-value=0.034, $\beta=0.412$) have a significant coefficient. Finally, according to F, controlling variables and intellectual capital growth rate, they together have a significant effect on next year return on equity.

Hypothesis 7: There is a significant relation between intellectual capital growth rate and next year return on asset of companies.

For testing this hypothesis by using the simple correlation model, it considered the intellectual capital growth rate as an independent variable and next year return on asset as a dependent variable. In multiple regression equation, the independent variable of intellectual capital growth rate, the controlling variables of debt ratio and company size included as predicting variables. For controlling the variables, we calculated the partial correlation coefficient. The test results offered in table 9.

Table 9- The regression test results for hypothesis 7.

Model	Variables	α	b	β	p- value	The simple correlation	partial correlation	F
1	intellectual capital	0/110	0/016	0/124	0/004	0/124	0/124	15/486
2	intellectual capital	0/039	0/039	0/119	0/005	0/124	0/151	22/147
	debt ratio		-0/302	-0/267	0/005	-0/185	-0/238	
	size		0/159	0/451	0/003	0/207	0/405	

According to table 9, in first model for intellectual capital growth rate without controlling variables, $\beta=0.124$ and p-value=0.004. Thus, respect to significance level of 0.05, the H_0 is rejected. Therefore, intellectual capital growth rate has a significant relation with next year return on asset. In second model due to existence of controlling variables including debt ratio and company size (with p-value=0.005, $\beta=0.119$ and partial correlation coefficient=0.151) again we see that there is a significant relation between intellectual capital growth rate and next year return on asset. In addition, the controlling variable of debt ratio (with p-value= 0.005, $\beta=-0.267$) and company size (with p-value=0.003, $\beta=0.451$) have a significant coefficient. Finally, according to F, controlling variables and intellectual capital growth rate, they together have a significant effect on next year return on asset.

Hypothesis 8: There is a significant relation between intellectual capital growth rate and next year circulating capital return of companies.

For testing this hypothesis by using the simple correlation model, it considered the intellectual capital growth rate as an independent variable and next year circulating capital return as a dependent variable. In multiple regression equation, the independent variable of intellectual capital growth rate, the controlling variables of debt ratio and company size included as predicting variables. For controlling the variables, we calculated the partial correlation coefficient. The test results offered in table 10.

Table 10- The regression test results for hypothesis 8.

Model	Variables	α	b	β	p- value	The simple correlation	partial correlation	F
1	intellectual capital	0/506	0/157	0/243	0/041	0/243	0/243	38/148
2	intellectual capital	0/473	0/054	0/239	0/018	0/243	0/218	27/658
	debt ratio		0/412	0/063	0/011	0/154	0/086	
	size		0/039	0/015	0/062	0/094	0/079	

According to table 10, in first model for intellectual capital growth rate without controlling variables, $\beta=0.243$ and p-value=0.041. Thus, respect to significance level of 0.05, the H_0 is rejected. Therefore, intellectual capital growth rate has a significant relation with next year circulating capital return. In second model due to existence of controlling variables including debt ratio and company size (with p-value=0.018, $\beta=0.239$ and partial correlation coefficient=0.218) again we see that there is a significant relation between intellectual capital growth rate and next year circulating capital return. In addition, the controlling variable of debt ratio (with p-value= 0.011, $\beta=0.063$) and company size (with p-value=0.062, $\beta=0.015$) have not a significant coefficient. Finally, according to F, controlling variables and intellectual capital growth rate, they together have a significant effect on next year circulating capital return.

Based on results that obtained by hypothesizes testing, there is a significant relation between intellectual capital growth rate and future profitability of company and therefore, the final four hypothesis of this study is confirmed. The controlling variable of financial leverage had a significant coefficient in all four hypothesizes but company size in last sub-main hypothesis similar to the first main hypothesis, wasn't seen as a significant controlling variable.

VI. Conclusion and suggestions

In this research, the obtained results from hypothesizes testing show that there is a direct and significant relation between intellectual capital, intellectual capital growth rate and future profitability of companies in statistical society of research. By these reliable results, again the importance of intellectual capital confirmed and it can claim that intellectual capital has a deterministic power for profitability. Thus, by providing a guideline for enhancing the intellectual capital, managers can have a clear horizon for increasing their profitability. This is the special desire of all managers and beneficiaries for increasing the stockholders' worth.

In previous studies, it showed that there is a positive and significant relation between intellectual capital, current and future performance of company. Also, results that obtained by Zéghal, Anis Maaloul, (2010) show that intellectual capital efficiency has a positive effect on financial performance of company. In Maditinos, D et al study (2011), the relation between intellectual capital and return on equity rate confirmed and this is conforming to our results in present study. The significant relation with current and future financial performance, in internal and external studies is conforming to our results.

According to present study results, it is suggested to financial managers that in addition to increasing their knowledge about intellectual capital by reinforcing the intellectual capital elements (human, structural and relational properties), they should develop this context in their organizations, so that by using the competition advantages of intellectual capital, increase the profitability of their companies.

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