EFFECT OF HUMAN RESOURCES COSTING (HUMAN RESOURCES ACCOUNTING) ON PROFITABILITY OF LISTED COMPANIES IN STOCK EXCHANGE

[a] BIJAN ABEDINI, [b]SAJAD MAHDIYANFAR

[a] Faculty Member of Hormozgan University
[b] MA Student, Islamic Azad University Qeshm Branch

Email: [a]*bijanabedini.ostd@gmail.com,*
[b]*sajad.mahdiyan117@gmail.com*

Abstract. The objective of this study is to examine effect of human resources costing (human resources accounting) on profitability of listed companies in stock exchange. Statistical population of study consists of companies accepted in Tehran Stock Exchange that 94 companies are chosen as sample size. Researcher hypotheses were analyzed using bivariate and multivariate linear multiple regressions as well as F, and t tests. Results obtained from hypotheses testing indicated a significant relation between dependent variable of firm profitability and independent variables including human resources costs, human resources costs ratio to total assets, human resources costs ratio to Net Operating Profit and human resources costs ratio to Net Operating Profit after Tax (NOPA).

Keywords: profitability, human resources accounting, human resources accounting ratios

1 Introduction

Human resources accounting is one of important issues considered in Iran. Since users of financial statements need information about all economic resources used in economic entity, the human resources employed in organization are considered by these users. Investors, who are users of financial statements, need some information about human assets value and changes in these assets during financial period to make right investment decisions. Units' managers, who are financial information users, need such information to plan and control human resources. Moreover, human resources accounting is a method for evaluation of management performance in terms of benefiting from human resources. In all organizations, skilled and specialized staffs are scarce resources and all managers of economic units and social institutes search for such staffs to promote their performance levels or tend to spend extra costs to train human resources in order to achieve the optimum level. Obviously, lack of information about economic value of such scarce resources or information about the division of the spent costs into asset account or cost of period would lead to inability to correct or employ these resources properly (Abachi, 2013).

In todays' organizations, employed human force not only is able to do general tasks but also can provide professional services, which are value creator more than before. Therefore, it is required to have a system or instrument capable of determining real value of services provided by human resources as intellectual capita. Majority of economists emphasizes on formation of physical capital and human capital as the major determinant of economic growth and development. New growth theories focus on the role of human capital in economic growth and thought and opinion of trained human forces are introduced as the basic factors of economic growth and development within expansion of production technologies. In fact, it can be stated that physical capitals will be productive if the country has required level of human capital.

Moreover, traditional financial statements that are based on the accounting accepted principles just indicate the value of physical assets of organization not providing the level of investments in recruitment, training and maintenance of this precious resource in frame of monetary measures. In traditional accounting system, all of the money spent on human resources are considered as cost and mentioned in profit-loss statement; in contrary, since human resource is treated as income and investment not cost in human resources accounting system, the depreciation cost of human resources is considered as cost in profit-loss statement and the remained costs spent in field human resources are inserted in balanced sheet under the title of human resources investment. Also, all of money spent on human resources are considered in column related to assets separately entitled investment in human resources, because the money spent on human resources is treated as investment not cost in an organization (Farmahini Farahani, 2011). Accordingly, such attitude in accounting system would lead to transparency of accruals written in balanced sheet and transparency of profit and loss statement of organization.

In this study, the author tends to examine the effect of human resources accounting on profitability of companies accepted in stock exchange.

2 Research Background

Johanson and Holmgren (1998) conducted a study entitled "the relation between human resources accounting and concepts of balanced scorecard system" in which, they considered the importance of human resources accounting in performance evaluation and providing strategy map and scorecard. Results obtained from their study indicated that application of human resources accounting is important in factors of balanced scorecard in particular the factor related to employee learning and growth.

Bullen et al. (2000) presented a paper about the relation between human resources accounting and concepts of balanced scorecard system. They concluded that application of human resources measures has a significant effect on evaluation of growth and learning factor as well as long-term success of firms.

Turner (2000) presented a theoretical paper about the effect of human resources accounting of organization on growth and learning. He concluded that information of human resources accounting in effective in supervision on employee performance and human resources creation and evaluation by managers.

Stovall (2001) conducted a study entitled "concepts for theory and practice in human resources accounting" in which, shortcomings of traditional accounting systems and importance of reporting of accounting information related human resources in companies. Results obtained from this study showed that knowledge understanding of demanders of human resources accounting information has not been properly developed in terms of human resources valuating models. Stovall recommended changes in field of educational opportunities in human resources scope.

Flamholtz et al. (2002) defined human resources accounting as an attempt to identify and report investment in human resources, which is expected to create extra profits for the firm in future. According to this definition, human resources of each organization can be reported as assets in financial statements if they can increase future profitability of company through improving production and providing goods and services.

America Association of Certified Public Accountants (1983) defines human resources accounting as follows, "human resources accounting is a process to identify and measure data related to human resources of companies through exchanging this information with beneficiaries in order to contribute to decisions made by users inside and outside of the country". Human capital can be defined as knowledge acquired by individuals obtained through life and used to produce and present more qualified good and services (Afiouni, 2007).

Verma and Due (2008) conducted a study entitled "human resources valuation" in which, they employed current measurement approaches and expected advances to determine acceptance level of human resources valuation models. In this research, questionnaire was used for a sample consisting of 370 American firms. Results obtained from this study showed that

majority of these firms could perceive these models and consider human resources information as a key factor in decision-making.

Deem (2009) studied the relation between organizational culture and practical application of important factors to evaluate performance of governmental organizations. Results obtained from statistical analysis of this study showed that the most important criteria used in governmental organizations for performance evaluation are as follows: 1- employee learning, 2- organizational learning, 3- employee stability, 4- employee satisfaction, and 5- positive attitude toward employees.

Professor Hashemi (2005) conducted a descriptive-analytical study entitled "analytical study of human resources accounting models emphasizing on selective models in companies accepted in Tehran Stock Exchange". Analysis of obtained data shows that possible application of mentioned methods is evaluated at low and average level and among existing models, the model of acquisition cost is chosen as the best applicable model from the perspective of studied members.

Gholami (2005) studied barriers and problems in implementation of human resources accounting in Iran. In this research, awareness level of financial information users, information providers, professional and academic associations of accounting was examined in field of human resources accounting. Results obtained from this study indicated that the major reason for lack of human resources accounting implementation in Iran is related to lack of information among users and accountants; also, professional and academic associations have not conducted effective actions to introduce this kind of accounting.

Namazi and Jamee (2008) studied the role of human resources accounting (costing) information in factors of balanced scorecard of companies listed in Tehran Stock Exchange. They obtained the following results:

Human resources accounting information (costing) is indeed the application of concepts of accounting information system at the range of human resources. This accounting method is a criterion for costing and measurement of human resources as the main resource in every company. Hence, the objective of this paper was to examine the role of accounting information (costing) of human resources in factors of Balanced Scorecard System of companies of Tehran Stock Exchange. This study was conducted for time interval from 2004 to 2008 and consisted of 96 companies. Results obtained from hypotheses testing using "Partial Regression" implied that that there was a positive significant relation between human resources accounting (costing) and factors of Balanced Scorecard System (considering firm type and size, education and experience level of human resources managers) at both indexes and companies levels. Moreover, findings of this study at indexes level indicated positive effect of firm type and size on accounting (costing) equation of human resources and financial factor indexes (net profit, management of costs and total income), customer factor (return of sold product, and after-sale service), and internal process factor (bad debts and cost of maintenance and repair). Also, firm size and type, education and experience level of managers could positively affect human resources, growth and learning factor indexes (job quality, empowerment, job satisfaction, and improved employee training).

Almasi and Sepahban (2009) conducted a study to examine the "relation between investment in human resources, physical investment with economic growth of Iran during 1971-2005. They obtained following results: according to the standard Granger Causality Relation, there was a unilateral causal relation between physical capital and economic growth and there was a bilateral Granger causal relation between human capital and economic growth. Results obtained from short-term and long-term Granger Causality Test using error correction model indicated a bilateral Granger causality relation between economic growth and human capital, a unilateral Granger causality relation between physical capital and human capital; also, a unilateral Granger causality relation between physical capital and economic growth in short term and long term. Therefore, increased number of trained human resources can increase supply of specialized, researcher, and entrepreneur labor force. Definitely, such trained and skilled labor force can provide more rapid economic growth through innovations and optimal application of financial facilities in country.

Talebnia and Ghorbani (2010) conducted a study to examine "feasibility of human resources valuation models in Audit Institutions members of Official Accountant Association of Iran" and obtained following results:

"In this research, feasibility of historical cost model application and economic value model were considered in Audit Institutions members of official accountant association of Iran. The purpose of this study was to measure human resources and to report them as asset quantifying value of human resources using mentioned models. This study was a theoretical-descriptive research in which, questionnaire was employed for data collection. Statistical population consisted persons with MA or PhD degree in Accounting and simple random sampling method was used. Results obtained from this study indicated that application of these models was possible to measure human resources value; accordingly, human resources can be identified and reported as asset through quantifying the value provided by human resources based on monetary criteria."

Poormiri (2012) conducted a study to "calculate share of labour force, physical, human capitals as well as Research and Development (R&D) in economic growth of Iran during 1974-2007." The results of this study are as follows:

New growth studies indicate that internal factors of an economy such as human capital and R&D besides physical capital and technology can affect economic growth. The purpose of this study was to calculate the share of some factors such as human capital, R&D, unskilled labor force, and physical capital in GDP growth in 1974. In this research, the generalized Solow Growth Model 1 was employed. Information related to GDP, active population, physical capital, research budget of government, and consuming expenses in education sector were extracted from time-series data of Central Bank of Iran, Iran Census and Governmental Budget Center during 2007. Eviews software was used for calculation. Results indicated the effect of unskilled labor force, physical capital, human capital, and R&D on Iran's GDP growth was equal to 55, 3.28, 7.13, and 3% respectively. Results of other studied out of Iran show that the effect of unskilled labor force is low in developed countries, whereas, the effect of human capital and R&D was high (figure 1).
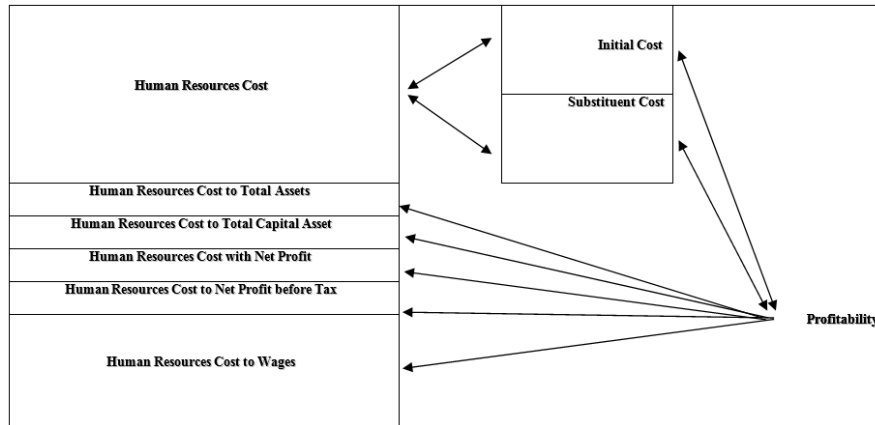
Figure 1. Analytical Model of Research

3 Research Method

This is an applied research in scope of Positive Researches of Accounting in which, multivariable regression method and econometric models have been used. Research hypothesis was tested based on the cross-sectional data and combined data. Statistical analyses were undertaken using SPSS, Eviews, and Matlab software. Statistical population of this study consisted of companies listed in Stock Exchange that had following conditions:

1) Company stock is exchanged in Tehran Stock Exchange during 2011-2014.
2) Transactional logo of company is not transferred to unofficial board.
3) Transactional logo of is active and is transacted at least once in year.
4) Financial year of company is finished at the end of March without any change in financial year during study period.
5) Financial information of company for studied period is accessible.
6) The company should not be included in financial mediation companies.

Table 1 indicates data and information existing in stock market during 2011-2014.

number of companies existed in stock market during 2011-2014	423 companies
number of companies not included in investment companies and banks	358 companies
number of companies with financial years ended on March	225 companies
number of companies, which their transactional logos have not been stopped more than 4 months	172 companies
number of companies with available information for research duration	97 companies
number of companies included in statistical population	94 companies

Library studies and note taking method were used as data collection methods and data summarization table was applied to conduct library study. To collect data related to human resources, a designed questionnaire was employed. This questionnaire was not filled out with individuals or companies but it was completed using financial information of companies in accordance with accessibility of human resources information including cost of recruitment, selection, education, and optimization.

Table 2. Calculation of statistical methods and presumptions analysis

row	subject	method/test
11	descriptive statistics	mean, variance, standard deviation, summarization table, graphical charts
22	evaluation of independent and dependent variables	Kolmogorov-Smirnov
33	selection of panel and combined data	F-Limer
44	determining stochastic variables	Hausman
65	Variance examination	White
66	errors independency	Durbin-Watson
7	analysis of relationships	linear regression
8	parameters generalization	t value and F value

Hypotheses of this study are modeled in frame of regression relations; therefore, it is required to examine basic assumptions of these relations before testing these regression relations and analysis of their results. Hence, three vital tests about regression relations of study are examined at this study. These tests are as follows:

Normality test of research data: Kolmogorov-Smirnov test was applied in this study to test normality of data through SPSS18 software. According to this test, normal distribution of research statistical population was approved at confidence level of 95% if Sig of Kolmogorov-Smirnov table is more than 5%.

To test fitness of linear pattern and lack of unrelated points, scatter diagrams are used. Since these diagrams do not show a clarified pattern (for example, curved, diagonal, etc. diagrams), fitness of linear regression and lack of unrelated points is accepted.

Variance Consistency Test: the last important point about regression relations in this research is related to consistency of variances in residual diagram compared to fitted values. If this diagram determines a specific pattern, one of basic presumptions of regression will be questioned and it can be claimed that data scattering is stochastic. Pearson correlation analysis, which is applied to determine relation between two quantitative variables, can be applied in some cases in which, firstly, both variables are measured and recorded at one section of time (simultaneously) and secondly data distribution follows normal distribution.

4 Research Variables

4.1 Independent Variable

Independent variable of this research is related to profitability criterion. In this study, Return on Equity (RoE) is applied as profitability indicator calculated through profit net dividing by total equity.

4.2 Independent Variables

Human Resources Cost Ratio to Total Assets: this ratio is calculated using human resources cost, which its calculation method is described above, and total assets of companies, which is obtained from financial information of companies.

Human resources accounting is a method to identify and report investment in human forces that are expected to create benefits excess of normal benefits for company in future. According to this definition, human resources of every company can be reported as asset in financial statements if they are capable of increasing future profitability of company through improving production and providing goods and services (Flamholtz, 2002). America Institution of Certified Public Accountants (AICPA, 1983) has defined human resources accounting as "a process to identify and measure data related to human resources of companies and exchange of these information with beneficiaries to help internal and external users with their decisions." Human capital can be defined as acquired knowledge of individuals obtained through life and used to produce and provide more qualified goods and services (Afiouni, 2007).

Human Resources Cost Ratio: to collect data related to human resources, Flamholtz Formula (1998) was used. In this method, a questionnaire consisting of questions related human resources cost of companies is designed and filled out through financial statements of these companies. This questionnaire was not filled out with individuals or companies but also it was completed using financial information of companies considering inaccessibility of some human resources information including cost of recruitment, training, and optimization.

This concept is obtained from the human resources cost ratio (in accordance with Holtz formula) to total assets of companies (Forooghi & Ahmad Nejad).

Human Resources Cost Ratio to Total Assets: this ratio is calculated through human resources, which its calculation method was described, and total assets of companies using financial information of companies (Independent variable).

This concept is obtained from human resources cost ratio (based on Holtz formula) to capital assets of company (Forooghi & Ahmad Nejad).

Human Resources Cost Ratio to Capital Assets: this ratio is calculated through human resources cost, which its calculation is described above, and capital assets of companies using financial information of companies (Independent variable).

This concept is obtained from human resources cost ratio (based on Holtz formula) to wages and bonus cost in company (Forooghi & Ahmad Nejad).

Human Resources Cost Ratio to Cost of Wages and bonus: this ratio is calculated through human resources cost, which its calculation is described above, and cost of wages and bonus of companies using financial information of companies (Independent variable).

This concept is obtained from human resources cost ratio (based on Holtz formula) to operating profit of company (Forooghi & Ahmad Nejad).

Human Resources Cost Ratio to Net Operating Profit: this ratio is calculated through human resources cost, which its calculation is described above, and net operating profit of companies using financial information of companies (Independent variable).

This concept is obtained from human resources cost ratio (based on Holtz formula) to operating profit of company (Forooghi & Ahmad Nejad).

Human Resources Cost Ratio to before-Tax Net Profit: this ratio is calculated through human resources cost, which its calculation is described above, and before-tax net profit of companies using financial information of companies (Independent variable).

4.3 Cost Model of Flamholtz

In this study, information of human resources costing is considered as independent variables based on the acquisition cost model of Flamholtz (1998). The acquisition cost model, which is also called "initial cost", consists of a cost of recruitment, teaching and learning of employees. Acquisition cost can be divided into two groups of cost of employee attraction and recruitment, accost of employee teaching and learning (Flamholtz, 1998).

Acquisition cost of Flamholtz can be included in 7 clear accounts in accordance with following headlines:

1-Recruitment costs, 2- selection costs, 3-formal teaching costs, 4- non-formal teaching costs, 5-introduction costs, 6- in-service training costs, 7-development costs. These costs are depreciated based on matching principle. Hence, cost model of human resources acquisition of Flamholtz for a company is as follows:

TRChr=achr+tchr

TRChr: acquisition cost of human resources of company;

achr: cost of attraction and recruitment of human resources;

tchr: cost of human resources teaching and learning.

This model was applied in this study due to following reasons:

1. Application of this model is matched with accounting situation of Iran. Result obtained from studies conducted by Sheybani (1998) and Professor Hashemi (2009) approves this point.
2. This model is matched with accounting operations for assets evaluation.
3. Acquisition Cost Model of Flamholtz (1998) is a substantive method.
4. This model is more accepted by tax organization compared to other methods.
5. Some researchers named Hassam Ghorbani (2000) and Namazi (2009) have used historical human resources cost model in Iranian companies and this model has been accepted in Iran.

The author of present paper also studies on value of information of human resources costing based on the historical cost model.

This method was developed by Bozada (1997), William C. Pill, R. Lee Bramet, and Eric J. Flamholtz (1998).

5 Research Mathematical Model

$$Y = F(X_1 + X_2 + X_3 + X_4 + X_5 + X_6)$$

5.1 Definition of Variables

1) Y: profitability
2) X_1: Human Resources Cost
3) X_2: Human resources cost ratio to total asset
4) X_3: Human resources cost ratio to capital asset
5) X_4: Human resources cost ratio to cost of wags and bonus
6) X_5: Human resources cost ratio to net profit
7) X_7: Human resource cost ratio to before-tax profit net

5.2 Definition and measurement of variables

X_1: human resource cost (independent), X_2: human resources cost ratio to total assets (independent), X_3: human resources cost ratio to capital asset (independent), X_4: human resources cost ratio to cost of wages and bonus (independent), X_5: human resources cost ratio to net profit (independent), X_6: human resources cost ratio to before-tax net profit, and Y: profitability (dependent).

5.3 Regression Model

For this purpose, following regression model is used:

$$F = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \varepsilon$$

5.4 Equation measurement

Y is estimated using n-variable regression estimating parameters α, β_1, β_2, β_3, β_4, β_5, β_6.

6 Findings

Table 3. Descriptive statistics of research variables

	number	mean	med	standard deviation	minimum
logarithm of company profitability	375	3.4978	1.9184	5.49278	4.14
logarithm of human resources cost	375	0.6695	0.6834	0.22602	0.06
ratio of human resources cost to total assets	375	0.5755	0.5616	0.23225	0.06
ratio of human resources cost to capital asset	375	0.0941	0.0510	0.12238	0.00
ratio of human resources cost to wages and bonus	375	1.4093	1.9872	31.13576	219.21
ratio of human resources cost to net operating profit	375	5.9738	4.2525	5.60331	0.01
ratio of human resources cost on before-tax net profit	375	4421.9611	2324.5800	4371.54356	671.00

According to table 3, descriptive statistics of variables indicate that selected sample has enough diversity; hence, results obtained from sample can be generalized to the population.

Table 4. Results of Hausman Test (choosing between fixed and random effects)

mutual relation between variables	Chi-Square value	df	P-value	test result
the relation between human resources costs and profitability	11.164	1	0.0248	fixed effects method

According to table 4, the obtained value of both models is significant. According to the reported significance, H_0 is rejected and H_1 is accepted at confidence level of 95% for each of models; hence, the fixed-effects methods should be used.

6.1 Relation between human resources costs and profitability

The effect of explanatory variable on dependent variable (profitability) is examined using information obtained from financial statements of companies in 2015.

The following part is related to regression estimation of relation between human resources costs and profitability.

As can be seen in table 5, since correlation coefficient (0.821) between two variables of human resources costs and profitability tends to 1 and since correlation at the rage from 0.075 to 1 is a strong correlation and since significance level of human resources costs and profitability is significant, the strong correlation between human resources costs and profitability is generalized as follows:

Table 5. Regression estimation of relation between human resources costs and profitability

variable	abbreviation	coefficient	t value	significance level	adjusted R^2	R
fixed coefficient	β_0	-2.529	-94.43	0.000		
human resources costs	TRChr	0.0024	6.31	0.000	0.593	0.821

Significance of coefficient related to independent variable and fixed coefficient is tested using t-student test. Null hypothesis and opposite hypothesis for estimation of model parameters (slop and intercept) are as follows:

$$\begin{cases} H_0 : \beta_i = 0 \quad i = 0,1 \\ H_1 : \beta_i \neq 0 \end{cases} \quad (1)$$

6.2 Value amount of test is calculated as

$$t_{\beta_i} = \frac{\hat{\beta}_i - 0}{S_{\beta_i}} \quad (2)$$

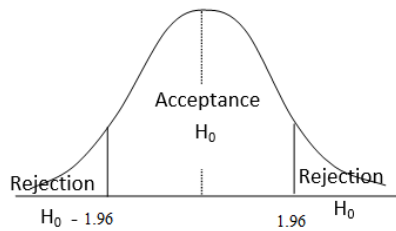Also, rejection and acceptance areas of null hypothesis are defined as follows:

Figure 2. Rejection and Acceptance areas of null hypothesis at confidence level of 95%

Judgment method is that is t value is at rejection area, H_0 will be rejected. According to the results of table 5, calculated t values, and related probabilities, significance level of t is lower than 0.05% for variables of fixed coefficient and human resources costs. Therefore, the test, equality of regression coefficients of these variables to zero, is rejected indicating significance of mentioned variables at confidence level of 95%. Therefore, the

relation between human resources costs and profitability is described as follows:

$$ROE_{it} = -2.529 + 0.0024\text{ it} \qquad (3)$$

As can be seen from this model, there is a positive significant relation between human resources cost and profitability. Examination of adjusted coefficient determination of model (0.593) indicates the high ability of model to explain and describe dependent variable. Accordingly, about 59.3% of changes in profitability are explained by human resources costs. F value of regression of this model implies explaining ability of model, because calculated F values are significant at 5% level. Therefore, there is a direct linear and significant relation between profitability and human resources cost in accordance with the calculated t values and adjusted coefficient of determination.

6.3 Relation between profitability and other independent variables

Table 6. Regression estimation of relation between profitability and independent variables

Variable	Coefficient	Adjusted R^2	R	t value	P-value
intercept	3.462			9.522	0.000
human resource cost	0.004%	0.593%	0.821%	6.321%	0.000%
ratio of human resources cost to total assets	0.004282	0.18	0.205	.0119431	0.000
ratio of human resources cost to capital asset	0.046243	0.11	0.078	1.246015	0.0914
ratio of human resources cost to wages and bonus	0.029261	0.08	0.083	2.339441	0.0710
ratio of human resources cost to net operating profit	0.000935	0.17	0.195	0.585351	0.0000
ratio of human resources cost on before-tax net profit	0.031251	0.14	0.104	1.352170	0.0246

According to table 6, coefficient of human resources cost ratio to total assets and profitability is positive; also, t value and significance level related to it imply significance of positive effect of this variable on company profitability. Therefore, hypothesis 2 is accepted.

Also, there is not any significant relation between ratio of human resources costs to capital assets, ratio of human resources cost to wage and bonus, and profitability of company. In other words, probability value is above 0.5%; therefore, hypotheses 3 and 4 are not accepted.

Variable of human resources costs ratio to net operation profit is positive; t value and significance level of it also indicate positive effect of the mentioned variable on company profitability. Therefore, hypothesis 5 is accepted.

Ratio of human resources costs to before-tax net profit and profitability is positive; t value and significance level related to it also indicate the positive effect of this variable on company profitability. Therefore, last hypothesis is accepted. This variable is bale to explain 14% of changes in company profitability.

According to the results obtained from table 4-12, the estimated model can be presented. In other words, multiple linear regression model of profitability ratios based on human resources factors is estimated as follows:

Profitability= 0.59 human resources costs+ 0.18 ratio of human resources cost to total assets+ 0.17 ratio of human resources cost to net operating profit+ 0.17 ratio of human resources cost to before-tax net profit.

$$Y = 0.59 + 0.18 + 0.17_{X1} + 0.14_{X4} \qquad (4)$$

It means that a one-unit change in independent variable of this research leads to about 6 units change (increase or decrease) in dependent variable if other variables are fixed.

Also, if other factors are assumed as fixed factors, a one-unit change in second, fifth, and sixth independent variables leads to 1.8, 1.7, and 1.4 unit change (increase or decrease) in dependent variable (profitability).

7 Conclusion

The purpose of this study was to examine the relation between human resources accounting and profitability in Tehran Stock Exchange during 2011-2014. Research territory is evaluation of the relation between human resources costs and profitability of company. The obtained results indicated a linear positive relation between human resources costs and profitability of listed companies in Tehran Stock Exchange. Therefore, the null hypothesis about the lack of relation between two variables was rejected; hence, this hypothesis was accepted.

According to the results obtained from final model, adjusted coefficient of determination was 0.588 and it means that this model is capable of explaining 58.8% of profitability changes. In previous researches, Etemadi and Chalaki (2005) found that there was a significant relation between criteria of human resources costs and profitability. This result is matched with the result obtained from present study. Betazi et al (2008) found that companies with higher productivity had higher profitability and more rapid growth. This finding is also matched with results of present study. Some recommendations are presented based on the research results in order to promote and expand further studies.

7.1 Practical recommendations based research results

According to the results obtained from hypotheses testing, there is a positive relation between human resources and profitability. Hence, some recommendations are presented as follows:

The present study is beneficial for all companies listed in Tehran Stock Exchange, all investors, and all users of financial statements. This research can:

1. Provide beneficial and accurate information for financial investors in market as well as a proper evaluation of performance of investee firms.
2. be used by stock market brokers to determine transactional price of stocks, to control rate fluctuations in major and minor halls of capital and financial markets.
3. be used by many of users such as stock investors and financial lenders. Meanwhile, the government is one of the important users of this research and can use it as a control measure at financial market level.

7.2 Practical recommendation based on further studies

Each study can pave the way for further studies that are necessary. Hence, it is required to conduct some studies considering following options:

1. Adding control variables to this research examining the results
2. Determining the relation between productivity and human resources investment in capital assets
3. Comparing human resources productivity ratios with other profitability factors

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