Exploring the Relationship between Human Capital Investment and Corporate Financial Performance of Jordanian Industrial Sectors

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ABSTRACT

The revolution of globalization, computerization and information technology has entered to Jordanian market. This phenomenon requires company's attention of human element and the acquired knowledge, experience and the development of the so-called concept of intellectual capital.(IC) In this study I used only the human capital as a part of IC. This study aims to exploring the relationship between human capital investment (HCI), and corporate financial performance. This study used an 11 industrial sectors listed of Amman Stock Exchange from 2005to 2011. Correlation analysis tests used in this study and the results indicate the high positive significant relationship between HCI and corporate financial performance related to, ROE , PTBV , log of sales , log of assets , DPS and ICR but no significant relationship between HCI and WCTO. The researcher recommends industrial companies to strengthen and stimulate the concept of human capital in the companies and the need for develop administrative innovation program. For future analysis may be used more sectors listed in market in addition used the all parts of intellectual capital related to structural and physical capital with corporate financial performance.

KEYWORDS: *Intellectual Capital, Human Capital Investment, Corporate Financial Performance.*

JEL CLASSIFICATION: *G14, J41, M41*

INTRODUCTION

The intellectual capital is important topics in science administrative, economic and financial terms and affect of the company performance and thus impact on their productivity and profitability which requires companies analysis and continuous assessment of all internal and external factors to try to seize the strengths and opportunities and avoid the challenges and weaknesses which this is reflected on the value of the firm (Bozbura, 2004). The intellectual capital is an important feature if taken by companies which are considered key to the success of the companies in the future and maintain its internal position in the completive market and strengthen its position in the competitive market outside and through the skills and knowledge of sophisticated and modern, which is reflected positively on the performance and provide goods and services to customers more attractive and good quality. The idea of intellectual capital enhances the concept of economic and financial companies where that investment will be in the areas of financial management and the human capital explain how to deal with it to increase its efficiency and its impact on performance In other words, should include modern information and

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working to add the value of an unusually competitive. The idea of intellectual capital is include the analysis of all the skills the company and evaluation all the processes and the attendant risks with the interpretation of how to avoid risks and to exploit all the resources available to the firm in an optimal way and in order to achieve it has to be building a corporate strategy effectively adopt intellectual creativity to individuals as reflected in the performance institutional (Edvinsson and Malone, 1997).

Intellectual capital management is deal for tools for the measurement. This process includes the cost to companies resulting from the investment in fixed assets, research and development expenses, training and rehabilitation of human resources and the amount of the efficiency of the size of investment in these resources, which is reflected in the financial performance and intellectual capital can be including the elements of structural, human and the physical capital (Andreessen, 2004). Physical capital (capital employed) can be defined as total capital, which is used to finance fixed assets for companies and this includes equity capital for shareholders plus loan capital based on long-term liabilities, but structural capital, reflect the company's ability to support human resources through infrastructure and databases that help human resources to perform its functions efficiently and effectively such as buildings, hardware, software of information system (Lev, 2001).

But the human capital is expressed as all the skills, experience and qualifications of personnel and that can be offered to companies also includes human resource capacity to solve problems that relate to the company in an optimal way which requires the continuous development of human and adopt ways to keep him and persuade him to job description for the job loyalty of employees, where if verify job loyalty for workers in their companies, it may reflect in an advanced stage concept of creativity administrative and financial (Firer & Williams, 2003). Under the concept of human capital term is include capital rational and considered part of it and which can be defined as all resources tangible and non- tangible which are related to the company's relationship with the external environment of the customers, lenders, suppliers, investors, creditors and others in order to perform its functions and purpose of the activity such as satisfaction, and loyalty customer's (Mavridis, 2004). The main objective of this paper is to empirically exploring the relationship between human capital investment, and corporate financial performance using industrial sectors listed of Amman Stock Exchange.

1. LITERATURE REVIEW

Some studies have dealt with the concept of intellectual capital (IC), or one of its components with the financial performance and market value or share price and the following is a review of some of the studies. Brennan and Connel (2000) indicate that (IC) is an important role in the management of the company's resources and it affects the performance. The results of the study also indicated there is a difference between the book and the market value and this difference as a result of the value of financial assets, which cost is more than the historical book. Fitz-enz (2001) suggests that human capital (HC) enhances the concept of efficiency and effectiveness in companies and increases the size of their assets. Firer and Williams (2003) analysis the IC where the results of the study indicated a statistically significant effect between IC and financial performance, which is associated with the following financial ratios: return on assets, return on equity and the market value of the book. Bozbura (2004) suggests that the HC skills and expertise possessed by the company and which can be used in solving administrative problems in addition to the risks associated with it. Wang and Chang (2005) suggest there a statistically significant effect of the elements of IC and financial performance so that was the human capital to the greatest impact of other elements.

The results of Huei-Jen Shiu (2006) study indicate the company's ability to convert existing intangible assets for companies such as creativity and the market value of customer relationships and other high value-added and so if the company has adopted the concept of IC. Vergauwen et al. (2007) explain and said only there is a correlation between IC and performance and variables that may affect this relationship is the cost of access to information, particularly with respect to intangible assets, which is reflected alleged competitive advantage for the company. Cabrita and Bontis (2008) suggests that were applied to the banking sector and the results of the study were human capital interacts with other elements of the IC to affect of performance but is not directly reflected, but through the interaction of all elements. Muhammad and Ismail (2009) results indicate the existence of a positive statistically significant relationship is between IC and financial performance with respect to a variable return on assets. Clarke (2010), results indicate there is a statistically significant between HC and institutional performance and there is an advantage achieved through investment in human resources.

Zhou, (2011) suggests that administrative innovation has become a necessity in the evolution of companies and a competitive advantage in terms of each company owned the idea of creativity based on new products and services, but this also depends on the availability of the concept of IC to companies and the extent of adoption of elements in. product development and quality improvement. Ar and Baki (2011) explain a correlation with statistical significance between IC and performance, particularly with regard to human capital as the increase of belonging and loyalty to employees is by actions , policies and administrative procedures in the company in terms of achieving justice among employees in terms of salaries, hiring and promotions and others which are reflected on the institutional performance. The study of Salman et al. (2012) presents a statistically significant relationship between the elements of the components of IC and the performance of companies where the relationship was strong element of HC more of them than the other variables of the components of IC.

2. The DATA & METHODOLOGY

Data were obtained through the financial reports of industrial companies from 2005 to 2011 of 11 industrial sectors listed of Amman Stock Exchange in Jordan. This sample is all industrial population listed sectors of ASE used in this study to exploring the relationship between HCI, and corporate financial performance**.** The sample contents the following sectors Chemical Industries , Mining & Extraction Industries Sector, Tobacco & Cigarettes Sector, Electrical Industries , Paper & Cartoon Industries, Engineering & Construction Industries Sector, Pharmaceutical & Medical Industries Sector Food & Beverages Sector, Printing & Packaging Sector, Glass & Ceramic Industries Sector, Textile, Leather & Clothing.

2.1 Hypotheses

The hypotheses of study summarizes as the following:
H0-1: There is a no statistical significant relationship between human capital investment (HCI) and sales
H0-2: There is a no statistical significant relationship between HCI and total assets
H0-3: There is a no statistical significant relationship between HCI and working capital turn over
H0-4: There is a no statistical significant relationship between HCI and interest coverage ratio
H0-5: There is a no statistical significant relationship between HCI and price to book value
H0-6: There is a no statistical significant relationship between HCI and return on equity
H0-7: There is a no statistical significant relationship between HCI and dividend per share

2.2 Variables & Model of Study

The researcher summarizes the models used to test the hypotheses. The study used the models of Firer and William (2003), Edvinsson and Malone (1997) to testing the hypotheses.

Log of sales (log. of S) = $\hat{a}_0 + b_1 HCI + e$ (1)
Log of Total Assets (log. of TA) = $\hat{a}_0 + b_1 HCI + e$ (2)
Working Capital Turn over (WCTO) = $\hat{a}_0 + b_1 HCI + e$ (3)
Interest Coverage Ratio (ICR) = $\hat{a}_0 + b_1 HCI + e$ (4)
Price to Book Value (PTBV) = $\hat{a}_0 + b_1 HCI + e$ (5)
Return on Equity (ROE) = $\hat{a}_0 + b_1 HCI + å$ (6)
Dividend per Share (DPS) = $\hat{a}_0 + b_1 HCI + e$ (7)

2.3 Measurement of Human Capital Investment (HCI)

In this part several steps to calculate (HCI); first I want to explain how to calculate value added, as the following:
Value Added (VAD) = outside (OS) – inside (IS)
Consistent with Riahi-Belkaoui, (2003) value added is expressed as:
Value Added = net sales (NS) – cost of goods sold (CGS) – depreciation (DPR) = staff costs (SC) + interest expense (IE) + taxes (TX) + dividends (DIV) + net income (NI)
Then, Edvinsson and Malone (1997) explain and refer HC_i (human capital) measured based on total investment in salary and wages for firm i; finally:
$HCI_i = VADi / HC_i$

3. TEST & DISCUSSION OF HYPOTHESES

In this part I want to explain the descriptive statistics of variables and empirical correlation results and discussion based on hypotheses test and as the following:

3. 1 Descriptive Statistics

Table 1 presents the descriptive statistics for the eight variables: human capital investment, log of sales, log of total assets, working capital turn over, interest coverage ratio, price to book value, return on equity and dividend per share. The results shows high mean variable is refer to log of total assets 8.11 and low variable is related to dividend per share 0.09 but high value of standard deviation is related to variable return on equity 11.51 and low value related to dividend per share 0.15 but high value of maximum number is to interest coverage ratio 47.08 and low value related to dividend per share 0.88. Finally, the high value of minimum number related to log of sales 6.62 and low variable related to return on equity -30.19. The results show the mean of the variable asset size was great for most industrial sectors, unlike other variables This is logical because most industrial sectors have fixed assets are great and so for the purposes of running their internal resources while the percentage distributions for this sector is weak, because some companies made losses during the global financial crisis, which stretched raised to Arab markets and therefore did not distribute dividends to shareholders. Some industrial sectors that achieved profits made saving these profits for the purposes of emergency or to set up investment projects in markets where there is an opportunity for success and this we see that the standard deviation was low, while the standard deviation is high for a variable ROE and this is explained by the fluctuation in earnings related to industrial sectors across the study period.

Table 1. Descriptive Statistics for Dependent and Independent Variables

Variable	Mean	N	Std.Dev	Maximum	Minimum
Human Capital Investment	2.67	77	2.94	16.54	-3.66
Log of sales	7.80	77	0.63	9.32	6.62
Log of Total Assets	8.11	77	0.55	9.44	7.13
Working Capital Turn over	2.86	77	3.13	12.28	-4.81
Interest Coverage Ratio	4.62	77	10.40	47.08	-15.77
Price to Book Value	1.44	77	0.79	5.23	0.40
Return on Equity	3.84	77	11.51	42.77	-30.19
Dividend Per Share	0.09	77	0.15	0.88	0.00

Source: author's calculation

3.2 CorrelationsTest Results & Discussions

Based on the data collected from 11 industrial sectors listed of Amman Stock Exchange from 2005 to 2011, the correlation test run for seven hypotheses, table 2 refer to exploring the relationship between HCI and corporate financial performance of Jordanian industrial sectors and the results show there are highly positive significant relationship between the HCI and corporate financial performance measured by log of sales, log of total assets, ,interest coverage ratio , price to book value, return on equity , and dividend per share. The results show the values of correlation R equals 0.743, 0.705, 0.725, 0.732, 0.804 and 0.475 respectively at strong sig = 0.000 of all variables at level of significant $p < 0.01$ and the, but the R^2 (Coefficient of determination) of these variables are 0.552, 0.496, 0.526, 0.535, 0.647 and 0.225. Finally no significant relationship between the HCI and variable of working capital turn over as dependent variable.

The results show of the study a positive and strong relationship between investment in human capital and financial performance of all industrial sectors and this relationship proportional sense of greater importance of human capital in firms. This importance of HC reflected on all financial ratios and characteristics of internal industrial sectors of Jordan.

This can be explained by the positive results of this relationship through the role of the industrial sector in the Jordanian market and reflects the positive results on all other sectors in the financial market. The importance of the human element in industrial companies is evident through the results where they can interpret the results through the department of human resources that are in each company and that it must taking specific criteria to keep up with the requirements of international quality and maintain a competitive position in the market among the competitors, and survival, growth is increasingly reflected the quality of the goods and services provided.

The efficiency and effectiveness of the human element is due to the efficiency of the top management so that if there is a set on the basis of experience, knowledge and competence with a job description written and detailed for each function is reflected in turn in a positive way on institutional performance as interpreted by the results in the sense required to corporate exploitation of human resources in an optimal way is working on adding value effective for companies and this is a modern concept in the management.

The efficiency and effectiveness will not be realized also that there is no clear organizational structure and concisely explains the duties and responsibilities of all employees in addition to the presence of feedback working on correcting deviation from this process. The positive institutional performance enhances corporate reputation in the financial markets to give a chance of foreign investors to enter and invest in these markets and enhance the value of the company's shares in the market. It also interprets the strong relationship of the existence of the so-called concept of innovation management and which promotes the concept of financial performance to create a positive value and effective for companies continue to contribute to increasing the productivity of companies.

The results of the study show a strong positive relationship between the sales and financial performance, and this is normal is supposed to be the sense of the higher sales reflected positively on the performance of companies and should be noted in this regard to the global financial crisis which has affected indirectly on sales of companies and due to lack of liquidity in the markets, which had a negative impact on earnings. Despite the effects of the global financial crisis negative impact on some companies in various sectors in the market, but some industrial sectors maintained a reasonable percentage of the profits compared to the size of their sales. The most important role here in promoting the sales and profitability is the efficiency of human resources, both in top and low management for industrial companies. This role for public relations department, sales and marketing to promote the product or service provided and this will not be achieved without an offsetting specific financial goals spending promotion.

The size of assets is largest of all industrial sectors and consisting of fixed and current assets , which explains the result of positive correlation with the financial performance and this will not be achieved without the presence of efficiency in the management of human capital as the efficient use of the asset . The optimal utilization is necessary and as basis of the success of many companies where there are many ways explain how asset management mange the assets and maintenance or replacement and choose the best way and that is reflected on the profitability of high and low cost.

The results of the study show there is no relationship between the working capital turnover and financial performance, which can be explained by the lack of efficient use of working capital to generate sales and also can be measured by the ratio of the net sales on average working capital. On other words this ratio measure the percentage amount of the operation and one unit cash in finance operations and purchase inventory and then converted into sales and this process is not done efficiently so reflected on the financial performance by number of times within a certain period of time.

While the index interest coverage ratio was associated with a strong relationship with financial performance, which explains the exploitation of good loans. This mean there is investment sides reflected on the profitability of companies where we see if it cans companies cover the interest from the profits derived from the use of loans, this index is good and this will not be achieved also without the active role of human capital.

In Interpretations earlier been discussing the financial performance positively reflected in the share price in the market in a positive way so as to appreciate the growing thus encouraging investors to buy these stocks and this is explained as a result the correlation between the value of the stock in the market to book value with the financial performance . As we know the stock prices change in the market as a result of many different factors, while if positive change in the stock price as a result of the financial performance so it is a good indicator and reflect natural growth of the company.

The variable return on equity results show the strong relationship with the financial performance and explain the profitability positive generated by the companies, which is reflected on equity in the sense measure .This ratio explain the efficiency of companies to generate profits from for a unit of shareholders' equity and thus shows the extent of the success of companies a valuable use of investment funds to generate growth profits.

Finally, note the positive relationship between dividend per share and financial performance and despite the decline in dividends to shareholders in general in the industrial sectors compared with other sectors, but there is positive correlation is significant with the financial performance. This point stimulate investors about annual distributions that can be obtained and, as we know the stocks profits include a distributions plus a margin of the price difference that can be achieved, but the companies are trying in some periods of detention of these distributions for operational purposes contribute to enhancing the productivity of companies in a better way.

Table 2. Correlation Analysis: HCI and Corporate Financial Performance

Variable	R	R^2	St. of EST	Sig
Log of sales	0.743	0.552	0.425	0.000***
Log of Total Assets	0.705	0.496	0.393	0.000***
Working Capital Turn over	0.059	0.004	3.15	0.607
Interest Coverage Ratio	0.725	0.526	7.21	0.000***
Price to Book Value	0.732	0.535	0.547	0.000***
Return on Equity	0.804	0.647	6.88	0.000***
Dividend Per Share	0.475	0.225	0.136	0.000***

*Significant at $p < 0.10$ ** Significant at $p < 0.05$ *** Significant at $p < 0.01$

Source: author's calculation

CONCLUSIONS

The mission of the survival and continuity working of the companies in the market is not as easy as they have the ability to cover its financial and non-financial obligations to gain a competitive advantage in the market. This would only be activating the role of human capital in companies to work efficiently and effectively. This study used industry sectors listed in ASE from 2005 to 2011. This sector play an important vital role in economies .The results show there are highly positive significant relationship between the human capital investment and corporate financial performance measured by log of sales, log of total assets, interest coverage ratio , price to book value, return on equity , and dividend per share The results show the values of correlation R equals 0.743 , 0.705 , 0.725 , 0.732, 0.804 and 0.475 respectively at strong sig = 0.000 of all variables at level of significant $p < 0.01$ and the, but the R^2 (Coefficient of determination) of these variables are 0.552, 0.496, 0.526, 0.535 , 0.647 and 0.225 . Finally no significant relationship between the HCI and variable of working capital turn over as dependent variable. The study recommends maintaining to enhance the importance of investing in human capital of companies and promotes this concept because of its great importance to the financial performance of institutional and develops an innovative incentive program works and build effective strategies to develop the skills, experiences and competencies of the employees and build effective strategies to motivate and increase their productivity and performance. For future analysis may be used more sectors listed in market in addition used the all parts of IC.

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