7.1 – Research Overview

It doesn’t make any sense to analyze the financial performance on the basis of tangible assets only or without measuring the impact of intellectual capital on it. The concept of Intellectual Capital is over two decades old and in all these years, the rich academic literature has explored various dimensions of intellectual capital. The main points of these writings are conceptualization, classification and measurement of intellectual capital along with its reporting and relationship with financial performance.

The use of information, information technology in business management has led to the rise of knowledge economy. In this new economy, knowledge intensive companies have gained impetus. Intellectual capital is considered as the main value driver and plays an important role to increase the corporate financial performance as well as impacts on the market value of knowledge intensive companies (Bozbara, 2004; Brennan & Connell, 2000; Petty & Guthrie, 2000). Few researchers have termed it as the fourth factor of production in addition to land, labor and financial capital (Chen Goh, 2005; Gu & Lev, 2001; Guthrie, 2001; Guthrie & Petty, 2000).

In the present research work, it is evident from the results that the concept of intellectual capital or value creation by knowledge is not being valued or given importance by knowledge driven industries in India.

The financial performance has been measured by the help of ratio analysis. The profitability, productivity and market valuation of the Indian IT sector have been gauged by the help of return on assets, return on equity, asset turnover ratio and market to book ratio.

To explore different methods is always a matter of research, the VAICT™ model by Ante Pulic is one of the most competent methods of measuring intellectual capital. It made the calculation of intellectual capital easier and enhanced the pace for conducting the researches on intellectual capital (Pulic, 2000).

Research on intellectual capital efficiency and its relationship with the corporate financial performance shows the impact of intellectual capital on the financial aspects of organizational performance. Alternatively, it examines whether traditional
corporate performance measurement techniques are influenced by the intellectual capital performance or not. Earlier the measures to calculate the company performance were based on conventional accounting principles and are unsuitable in the new knowledge economy. But such measures are the main bases of decision making.

In the present study, the BSE Information & Technology index had been taken as sample from 2006 to 2016. The financial data of 51 companies has been regressed by the help of STATA 13, to measure the impact of intellectual capital over the financial performance. The VAICT™ had been taken as the measure for intellectual capital while the financial performance had been measured by different parameters of profitability (ROA & ROE), productivity (ATO) & market valuation (MB).

The intellectual capital efficiency of Indian IT industry has been measured by the help of Ante Pulic’s VAICT™ model. It includes human capital and structural capital along with the physical capital. It is a simple and quantitative approach which uses accounting data and considers intangible resources as well.

7.2 – Research Findings

Initially it was being perceived that the intellectual capital and all its components play a major role in measuring the financial performance of knowledge driven sector but the results have shown that the concept of intellectual capital or value creation by knowledge is not being valued or given importance by IT industry in India. Among all the components of intellectual capital, CEE is found to be the most significant. CEE has a statistically significant positive relationship with all the three variables of financial performance (Gan & Saleh, 2008; Kai Wah Chu, Hang Chan, & Wu, 2011; Mondal & Ghosh, 2012). The HCE is positively significant with ROA and MB (Gan & Saleh, 2008; Mondal & Ghosh, 2012) while it is insignificant with ATO & ROE (Maria Morariu, 2014). The SCE has a significant relationship with MB (Chu et al., 2011) while it has an insignificant relationship with ATO, ROE, ROA (Chu et al., 2011; Mondal & Ghosh, 2012).
In Indian IT sector more importance is being given to physical capital assets rather than the intellectual ones. This is absolutely against the argument of many scholars that the intellectual capital is more important for knowledge driven enterprises which help them in acquiring competitive advantage.

The positive significant relationship of CEE with all the financial performance measures shows that it is the most significant component of VAICTM and the performance of a firm is still being perceived in terms of tangible assets, even in case of IT industry which is a knowledge based industry. It means that any increment in physical capital will lead towards the betterment of profitability of Indian IT sector.

Although the physical capital is directly proportional to the productivity of the IT industry, it is not the only way to improve productivity. The level of productivity can also be improved by increasing the advertising and promotional activities.

Instead of having significant relationship with profitability and productivity, the CEE is insignificantly associated with the market valuation, which shows that the investors are not very much concerned about the composition of physical assets in capital before investing.

The insignificance of HCE with the productivity indicates that firms who are being expected to create high value by managing human capital activities are not getting significant value in the market.

Human capital is insignificantly associated with the productivity means that it is still being considered as an expense rather than a resource. Actually it is an expensive resource and includes a major portion of total production cost which is not effectively managed.

The insignificant impact of HCE on profitability and productivity may be because of the traditional accounting practices which don’t give due consideration in measuring the value created by human capital. Another reason is the inability of the companies to extract full potential of their employees due to the lack of employees training, the regular training program is very important for the performance of employees and managers. The absence of working relationship between the industry and academic centers should also be removed to improve the human capital efficiency.
It has been expected and proved by many previous studies that human capital efficiency should be higher than the physical and structural capital efficiency. The human capital plays a pivotal role in creating the efficient structural and relational capital (Bontis, 2004). The competence and adroitness own by the employees are directly proportional to the structural and relational capital (Bollen, Vergauwen, & Schnieders, 2012). It has been proved that the nurturing of human capital seems to be of vital importance to Indian IT sector.

Although the structural capital always plays a pivotal role especially in case of knowledge driven industries, it is not performing well in case of Indian IT industry. The insignificant impact of SCE on productivity & profitability signifies that the managers are not utilizing the structural resources in order to achieve desired profitability and productivity. The sample companies found unable to utilize their structural capital. The insignificant relationship between SCE and profitability shows that the utilization and deployment of structural capital is growing rapidly and become very important for achieving profitability.

The important thing is to know, among the technologies or routines and procedures which are the major structural capital in Indian IT industry and about its impact on the financial performance of Indian IT industry. Managing the structural capital is also an expensive process as it requires lot of resources and none of them are visible in balance sheets. The absence of reporting the structural capital in accounting books makes it difficult for the stakeholders to assess the fall benefits of managing structural capital.

The significant impact of SCE with MB shows that the pivotal role is being played by the structural capital in generating profit in comparison with other VAICTM components. The Indian IT sector is getting significantly improved by an effectively managed structural capital.

This study also shows that the individual components of VAICTM show different values as opposed to the aggregate measure of VAICTM. The significant impact of VAICTM on profitability signifies that improved intellectual capital efficiency leads to better profitability and revenue growth and the IT sector generates profit from every single units of share holder’s equity. The importance of intellectual capital in
improving the firm’s profitability and growth of the companies is evident from the results.

The VAIC™ has no impact on market valuation because Indian investors do not consider the share of intellectual capital while taking decision regarding investments. The current reporting system, which fails to capture the information on IC, is also an important reason for the failure of MB to explain the efficiency of IC. There are other factors which are more significant and relevant as compared to intellectual capital performance.

Although the importance and efficiency in the utilization of intellectual resources is growing rapidly at global level, the same is unable to create an impact on the financial performance of Indian IT industry.

These results are very alarming for the policy makers to analyze the reasons behind the non existence of an empirical relationship between the components of VAIC™ and measure of financial performance. To make the value creation process more clear, it is urgently required that the policy makers should start disclosing the IC voluntarily, for promoting the knowledge about the concept of intellectual capital.

Efficient and proper investment in human capital and structural capital will take the productivity and profitability to a completely different level. Even the presence of a few natural resources will not hamper the productivity and profitability.

7.3 – Implications of the Study

7.3.1 – For Managers

- Financial Performance should be measured in a different way. The data for measuring financial performance should consider the intangible assets as well.

- The VAIC™ can also be used for gauging the role of intangible assets in the financial performance.

- Proper training programs should be arranged for the employees to upgrade the human capital. The insignificance of human capital on profitability and productivity is also because the human capital is not at par with the required one.
• The insignificance of structural capital with all the measures of financial performance symbolizes that the software and all the working related systems need to get upgraded and at par with the current software available worldwide.

• To survive in the market it is very important to make proper investments on the research and development sector because innovation is a key factor to boost the financial performance of knowledge driven sector.

• The disclosure of information regarding intangibles is also very important because it is very important for all the stakeholders to know the intellectual capital specially in knowledge driven sector.

7.3.2 – For Investors

• The investors should be concerned about the intellectual capital of knowledge sector before investing because it plays a pivotal role in the performance of companies belong to the knowledge driven sector.

7.3.3 – For Education Sector

• The researchers should develop other robust models for calculating the intellectual capital.

• The researches should also take part in convincing the managers for voluntary disclosure of intangible assets.

• The impact of intangible assets on the financial performance of other knowledge driven sectors should also be gauged.

7.3.4 – For Government

• To facilitate the training and development programs for human development as it is the most important asset in the knowledge era.

• The formation of some strong policies regarding the intellectual capital disclosure as it is very important to know about the intellectual capital specially for knowledge driven companies.
• The proper upgradation of structural capital in sectors which are important for the economic development of the country. It has been proved that the importance of structural capital is not less than the human capital.

7.4 – Limitations

Like many other studies, present study is also not free from limitations. The main limitation of this study is the use of VAIC™ model for measuring the intellectual capital efficiency. The VAIC™ has been criticized by some researchers on various points. It is not applicable to low productive companies (input costs are more than output). Another drawback of this model is that, an inverse relationship between human capital and structural capital is being assumed in the matter of value creation. But it is very difficult to calculate exactly the contribution of each resource on final value creation (Bontis et al., 2000). The VAIC™ score doesn’t consider the contribution of relational capital. However, at present there is no suitable model to measure IC efficiency on the basis of the published accounting information other than the VAIC™.

In the present study, productivity, profitability and market valuation of sample companies has been measured through assets turnover ratio, return on assets, return on equity and market to book value, respectively. The use of MB as the market valuation also falls under the grey area because the investors may not always consider the financial statements before investing; in fact major decisions have been taken under the influence of news and information. Some other financial performance measures cannot be determined due to unavailability of data.

Another limitation of this study is the time period and use of data. The data have been taken from 2006-2016 which is a very long period, generally the structure of the companies keeps changing and this affects the analysis of the companies. In this study 51 IT companies have been selected. Therefore, a general view may be obtained if research is conducted considering other sector of companies.

7.5 – Directions for future research

There are many other dimensions to conduct the research on same concept. In near future the research may be conducted in the following ways:
• For a shorter period of time because generally long time duration is responsible for structural changes.

• Measure the financial performance in a different manner or by using some other technique.

• Apply different IC efficiency measurement model(s) for measuring the intellectual capital.

• The human capital can be calculated by the data generated from some other means rather by extracting from financial statements.

• The disclosure of intellectual capital information in the annual reports of the companies and its relationship with the market value of the firm can also be examined in future researches.