

**Intellectual Capital Impact On Firm Performance, Shareholders
Capm Expected Return And Value At Risk Of Selected Mnc's**

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ABSTRACT

The purpose of this study is to investigate the impact of intellectual capital on financial performance and profitability of selected companies in India. In total 5 companies were selected as the sample. The study made use of secondary data sourced from annual reports and financial statements of these companies from audited and reliable sources like company websites and Y charts. The study reveals that value added intellectual capital and its components have a significant association with the company's financial performance and profitability. The study therefore recommends, inter alia, to the management of the company to endeavour to provide adequate information and a supportive work environment and development programs that will automatically increase the efficiency and productivity of the labour. The study will be very beneficial to the different policy makers by considering the importance of intellectual capital in evaluate the financial performance of the company. However, among the main limitations, this study does not cover other sectors such as the service sector in the same region

KEYWORDS: *Knowledge capital, Intellectual capital*

INTRODUCTION

The term “Knowledge economy” (Fritz Mechuip) Propagated by Philip Kotler has got tremendous attention from last two decades as the knowledge asset became the supreme asset in the organization and industries. The knowledge assets or

Intellectual assets are forming part of Intangible assets which is presented in the balance sheet with an optimum level of disclosures. Intangible Assets include knowledge, experiences, Skills and traits etc...which are difficult to measure, whereas both Physical and financial assets of a firm include tangible assets like building, machinery, plants etc and working capital, owner's equity, retained earnings etc has been reported without force. We are witnessing the notable difference between the Market Value and Book Value of assets, this difference is due to the performance of Intangible assets or Intellectual Capital of the firm.

Knowledge and Intellectual Capital (IC) contributes largely to the competitive edge (Wiig: 1997). IT, ITeS, BPO, KPO companies are having appreciable amount of intellectual assets in the form of Human Assets with good grade of intelligence and academic credentials and Intellectual Properties like patents, trademarks, licensing, copyrights etc.. The Directors and BOD members including CEOs of major IT companies are either expelled or retained in the business to withstand the keen competition in the technology field. They are paid highest remuneration and other compensation to carve the fruitful outputs of intelligence from them. Even the technicians and designers like personnel have been paid high in this sector all that costs are treated as Human cost with respect to conventional accounting standards and written off against profit in the Income statements. Ante Pulic (1998) identifies these costs as Human Assets and he developed an intellectual capital measurement tool called VAIC™.

This study makes an attempt to analyze the impact of Intellectual capital on the firm performance of IT MNCs in India by taking the Top 10 IT MNC companies into account. The data of the 10 respective companies in the top List index has been collected from secondary sources (Ycharts and CMIE Prowess) and measured the value of IC Using Ante Pulic's VAIC™ model. The firm performance Indicators are summarized towards the selection of Return on Equity (ROE), Return on Assets (ROA) and Net Profit Margin (NPM) and Earning Per Share (EPS). Many country specific and industry specific analysis have been made by previous researchers to analyze the very relationship of IC with these performance Indicators. Significant relationship between IC on ROA has been concluded (Nik Maheran and Nik Muhamed et.al: 2009, Firer and Williams: 2003, Muhamed Ismail: 2009, Wang: 2001, Gosh and Mondal: 2005). Researchers also Concluded that there is significant relationship between IC (VAIC™) and ROE (Fethi Calisir: 2010, Gosh and Mondal: 2009, Kehelwatatenna et.al: 2010). The strong significant relationship of IC on performance Indicators ROA and ROE has been established (Muhamed Ziqul Haq: 2014, Muhamed Gorban Mehri et.al: 2013, Chang and Hsieh: 2011, Chen et.al:2005). The impact of IC (VAIC™) on Net Profit Margin and Gross Profit Margin has been proved by Chang and Hsieh (2011) and Gosh and Mondal (2012).

The Intellectual Capital of an organization is said to be a source of competitive advantage and there is evidence that the success business can be partly influenced by its Intellectual Capital. Earlier literatures in Intellectual Capital argues that the difference between the company's market value on the stock exchange and its book value is relies on its intellectual capital. The value of the employees' knowledge of

organizations, business training and any exclusive information that may give an upper hand to the organization. Intellectual Capital is considered as an asset, and can comprehensively be characterized as the gathering of every information resources an organization has available and that can be used to drive profits, increase new clients, make new products, or otherwise enhance the business. Intellectual Capital is a real business asset, although measuring it is a very subjective task. Organizations spend millions every year preparing their employees in business-particular topics and otherwise paying for enhanced ability in their staff. This capital employed gives return to the organization, one that can contribute toward many years of business value. As innovation and process enhancements turn out to be all the more a differentiating factor within present day organizations, Intellectual Capital is probably is likely to become an even stronger force in the marketplace.

OBJECTIVES OF THE STUDY

- To examine the impact of Intellectual Capital on CAPM Expected Return.
- To analyze the impact of Intellectual Capital components on CAPM Expected Return.
- To examine the impact of Intellectual Capital on value at Risk.
- To analyze the impact of Intellectual Capital components on value at Risk.

Research Hypothesis

1. H1: There is a significant effect between MVAIC and CAPM Expected Return
 - H1a: There is a significant between human capital efficiency (HCE) and CAPM Expected Return
 - H1b: there is a significant effect between structural capital efficiency (SCE) and CAPM Expected Return
 - H1c: There is a significant effect between capital employed efficiency (CEE) and CAPM Expected Return
 - H1d: There is a significant effect between relational capital efficiency (RCE) and CAPM Expected Return
2. H2: There is a significant effect between MVAIC and VAR (Value at Risk)
 - H2a: There is a significant between human capital efficiency (HCE) and VAR (Value at Risk)
 - H2b: there is a significant effect between structural capital efficiency (SCE) and VAR (Value at Risk)
 - H2c: There is a significant effect between capital employed efficiency (CEE) and VAR (Value at Risk)
 - H2d: There is a significant effect between relational capital efficiency (RCE) and VAR (Value at Risk)

The Equations for Linear Regression Model

$$\text{CAPM Expected Return}_{it} = \alpha_i + \beta(\text{MVAIC}_{it}) + \mu_{it} \quad \mathbf{M(9)}$$

$$\text{CAPM Expected Return}_{it} = \alpha_i + \beta_1(\text{HCE}_{it}) + \beta_2(\text{SCE}_{it}) + \beta_3(\text{RCE}_{it}) + \beta_4(\text{CEE}_{it}) + \mu_{it} \quad \mathbf{M(10)}$$

$$\text{Risk} = \alpha_i + \beta(\text{MVAIC}_{it}) + \mu_{it} \quad \mathbf{M(11)}$$

$$\text{Risk}_{it} = \alpha_i + \beta_1(\text{HCE}_{it}) + \beta_2(\text{SCE}_{it}) + \beta_3(\text{RCE}_{it}) + \beta_4(\text{CEE}_{it}) + \mu_{it} \quad \mathbf{M(12)}$$

LIMITATIONS OF THE STUDY

- The study has conducted with limited number of companies.
- This study has considered only IT sector, Other Knowledge Intensive industries has omitted.
- Time constraints to undertake an extensive study.

REVIEW OF LITERATURE

- Anvari Rostamy, AA and Seraji, H conducted a study on valuing Intellectual Capital and study the relation between companies' IC values with their share market prices; empirical evidence from Tehran Stock Exchange (TSE), in *The Indian Accounting and Auditing Review*, 2005.
- 2007 Appuhami and BA Ranjith studied the impact of Intellectual Capital on the investor's capital gain on shares; empirical investigation in Thai banking sector, finances sector and insurance sector and the paper presented at ASAC.
- Bontis, Ncik in 2001, *Assessing knowledge assets; a review of the models used to measure Intellectual Capital* published in *International Journal of Management Reviews*.
- Prioritization of firms capital measurement indicators using fuzzy by Bozbura, F TUNC and Beskese, Ahmet in 2007, in *International Journal of Approximate Reasoning*. Riahi-Belkaoui, Ahmed, 2003: A study of the resource-based and stakeholder views in Intellectual Capital and performance with special reference to US multinational firms *Journal of Intellectual capital*.
- Mungungu (2010) examined the effect of social capital in making intellectual capital in two of Iran's car organizations (Iran Khodro and SAIPA). The results showed that there is a positive and significant relation between social capital and Intellectual Capital.
- Ali Akbar, Afjeh in 2010 studied the effect of Intellectual Capital management on financial performance, *Journal of Public Administration*. A study conducted on Intellectual Capital: an exploratory study that develops measures and models, management decisions by Bontis. N. in 1998

- In 1997 the developer of VAIC model Pulic conducted a study on Austrian banks, the physical and Intellectual Capital, available on <http://irc.mcmaster.ca> (assessed 11 June 2004).
- Saghafi, M, examined future cash flows, accruals, abnormal and bankruptcy risk in 2012, Journal of Accounting Research. Sadeghi, F (2009), conducted a study on Intellectual Capital, a valuable and effective state tax agencies, in Iran, Administrative Science Quarterly.

ANALYSIS AND INTERPRETATION

This chapter deals with the Analysis part of the model and Hypothesis developed. Analysis part include Durbin Watson, Descriptive Statistics analysis were made to assess the characteristics of the variables, spearman's correlation analysis to check the relationship between variables and Panel Regression Analysis has been done to arrive at the final result for the hypothesis developed.

Table 1: Relationship between Intellectual Capital (MVAIC) and CAPM Expected Return

Variables	Model 1 CAPM Expected Return Co-efficient (p- value)
Intercept	-1.483
MVAIC	-0.758 (0.0000)
Adj. R ²	0.203
R ²	0.213
F-value Stat.	20.678
F- value (prob.)	(0.00002)
Durbin Watson	0.695

Model 1 (Table No.1) examines the relationship between Intellectual Capital (MVAIC) and CAPM Expected Return. The results show that Intellectual Capital (MVAIC) has a negative and statistically significant relationship with CAPM Expected Return.

Table 2: Components of Intellectual Capital (HCE SCE RCE and CEE) with CAPM Expected Return

Variables	Model 2 – CAPM Expected Return Co-efficient (p- value)
Intercept	0.498
HCE	-1.856 (0.0000)

SCE	0.844 (0.0000)
RCE	0.301 (0.0000)
CEE	-0.035 (0.6308)
Adj. R ²	0.514
R ²	0.543
F-value Stat.	18.746
F- value (prob.)	(0.0000)
Durbin Watson	0.687

Model 2 (Table No.2) examines the components of Intellectual Capital (HCE SCE RCE and CEE) with CAPM Expected Return. The result showed that the HCE is having a negative and statistically significant relationship with CAPM where as SCE and RCE showed a positive and statistically significant relationship with CAPM Expected Return.

CEE didn't show any significant relationship with CAPM. 51% of variations in CAPM expected return is explained by Intellectual Capital Components.

Table 3: Relationship between Intellectual Capital (MVAIC) and Risk

Variables	Model 1 – Risk Co-efficient (p- value)
Intercept	-0.407
MVAIC	-1.408 (0.0055)
Adj. R ²	0.086
R ²	0.098
F-value Stat.	8.16
F- value (prob.)	(0.0055)***
Durbin Watson	0.29
Variables	Model 2 – Risk Co-efficient (p- value)
Intercept	4.298
HCE	-3.794 (0.0000)
SCE	2.484 (0.0000)
RCE	0.874 (0.0000)
CEE	-0.794 (0.0003)
Adj. R ²	0.510
R ²	0.539

F-value Stat.	18.174
F- value (prob.)	(0.0000)
Durbin Watson	0.564

Model 1 (Table No.3) tests the relationship between Intellectual Capital (MVAIC) and Risk. The results show that Intellectual Capital (MVAIC) has negatively and statistically significant relationship with Risk.

Model 2 examined the components of Intellectual Capital (HCE, SCE, RCE and CEE) with Risk.

This model showed that the HCE and CEE has a negative and statistically significant relationship with Risk where as SCE and RCE showed a positive and statistically significant relationship with Risk.

FINDINGS

- It is found that the Intellectual Capital has a negative impact on the CAPM Expected Return.
- CAPM expected Return is positively influenced by the components of Intellectual Capital such as SCE and RCE while HCE influenced negatively. There is no impact of CEE was found on the CAPM Expected Return.
- It is found that the Intellectual Capital (MVAIC) is negatively affected the Risk.
- The components of Intellectual Capital such as SCE and RCE have a positive impact on the Risk where as HCE and CEE affected the Risk negatively.

CONCLUSION

The study titled “Intellectual Capital impact on firm performance, shareholders CAPM expected return and value at risk of selected it MNCs in India” is a benign attempt to examine the relationship between Intellectual Capital (MVAIC) and firm performance measures (ROA, ROE, EPS and NPM). The study also explores to test the relationship between IC and CAPM Expected Return, IC and Risk (VAR). The components of Intellectual Capital (HCE, SCE, RCE and CEE) are also subjected to analyze its relationship with performance measures, CAPM Expected Return and Risk.

India’s top 10 IT MNCs has been taken for the study with 10 years of requisite data from 2007-2016. The collected data have been subjected to panel regression with respect to Fixed Effect or Random Effect using Hausman test. The test result showed that the Intellectual Capital and firm performance is positively related, more clearly, if the Intellectual Capital coefficient tends to increase the performance will also increase. Nevertheless relational capital and capital employed efficiencies didn’t show related. The study also reveals Intellectual Capital is negatively related to CAPM Expected Return. Structural capital and relational capital efficiencies positively

related to CAPM. The study showed that the Risk will be reduced if IC coefficient is high. High level of HCE and CEE reduces Value At Risk.

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