
The Impact of Intellectual Capital on Firms' Performance: A Literature Review

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Abstract

Intellectual capital is a key for the success of firms' but still there is a lack of studies in various sectors of developing countries. Intellectual capital Therefore, this study attempts to gather the findings of studies that were conducted in intellectual capital perspective. The findings of the studies encouraged to conduct empirical research in various sectors of developing countries from intellectual capital.

KEYWORDS: Intellectual capital, Firm Performance, Developing Countries

INTRODUCTION

Traditionally, the organizations were used only tangible assets for evaluate the financial performance. Financial and Physical assets are economic factors traditionally used by organization to demonstrate their success, but the emerging economy places value on the role of Information and Knowledge as a sustainable resource to acquire and maintain competitive advantages. In the era of globalization, only physical assets are not enough to measure the

efficiency of the firm. Intellectual Capital is more effective tool for the organization to compete the competition. In the early 1836, N. Senior wrote: "The Intellectual and Moral Capital of Great Britain far exceed all the Material Capital, not only in importance, but in productiveness." (Edvinsson, 1997) "IC can be defined as the intangible assets which are not listed explicitly on a firms' Balance Sheet, but positively impact the performance of it, thereby revealing the relationship between employees, ideas, and information and measure which is not measured." Last two decades, Intellectual Capital has eye catching concept.

Intellectual capital, as defined by the companies in the ICM Gathering, "is the sum of a firm's ideas, inventions, technologies, general knowledge, computer programs, designs, data skills, processes, creativity, and publications." The ICM Gathering developed a definition of "intellectual capital that has served them well ever since: Intellectual capital is knowledge that can be converted into profits. For these

companies intellectual capital comprises two major elements: human capital and intellectual assets:

Definition of Intellectual Capital:

Intellectual Capital has also been defined as the difference between a firm's market value and the cost of replacing its assets. It is those things that we normally cannot put a price tag on, such as expertise, knowledge and a firm's organizational learning ability. Market value equals book value plus intellectual capital, with book value usually only the tip of the iceberg of wealth.

Intellectual Capital encompasses much more than patents, copyrights and other forms of intellectual property. It is the sum and synergy of a company's knowledge, experience, relationships, processes, discoveries, innovations, market presence and community influence².

The most widely used definition of Intellectual Capital is "knowledge that is of value to an organization." Its main elements are Human Capital, Structural Capital, and Customer Capital. That definition suggests that the management of knowledge (the sum of what is known) creates Intellectual Capital.

Literature Review

Various empirical researches have been conducted to study Intellectual capital and firm

financial performance. The review of literature has been presented on the Indian studies as well as international studies. A review of some of the studies in this regards are as follows:

Hirschley and Weygandt (1985) consider the Advertising and R&D expenditure treatment issue from a market value perspective. The econometric model was used and results shows that positive impact between the R&D and the price to book ratio.

. Chauvin and Hirschley (1993) states that advertising and R&D expenditures have positively impact on corporate market value.

Lev et.al (1996) carried out a study on samples of 1971 to 1991 and results show that there is significant relationship between Firms' R&D capital and stock returns.

Bontis et.al (2000) carried out the studies to investigate the three elements of IC and their interrelationships within 2 industry sectors in Malaysia. PLS and Psychometrically validated questionnaire are used. The results found that Human Capital has greater influence on non-service industries compared to service industries while SC has positive relationship with business performance.

Belkaoui (2003) examines the relationship between a return on assets based on net added value and the specific intangible asset of IC. The findings show that there is a significant relationship between resource based and stakeholders' views.

Firer and Williams (2003) carried out a study on 75 publicly traded firms in South Africa. Correlation and Multiple regression methods are used. The results found that physical capital impacts on company's performance.

Lev and Radhakrishanan (2003) carried out a study on 250 companies to investigate whether the capital market is more efficient with respect to organizational capital. The results found that the capital market is efficient with intellectual capital in future.

Abdolmohammadi (2005) carried out a study on 500 fortune companies over the period of 1993 to 1997. The findings show that "new" economy sectors companies report on information technology and intellectual property and "old" economy sectors report on partnership and brand as their IC.

Chin-Chen et.al (2005) carried out a study on Taiwanese listed Companies to examine the relationship between corporate value creation efficiency and firms' market to book ratios. The

findings show that value creation efficiency has a positive impact on firms' value and profitability.

Goh (2005) study on commercial banks in Malaysia for the period of 2001 to 2003 to examine the efficiency of commercial banks in utilizing their intellectual capital. The findings show that HC has more efficiency as compared to structural and physical capital efficiencies and domestic banks has less efficient rather than foreign banks has more efficient.

Tseng and James Goo (2005) carried out the studies on Taiwanese manufacturers to investigate the relationship between IC and corporate market value of a company. The results observed that there is a positive relationship between IC and corporate value through the use of SEM.

Wang (2008) conducted a study on US traded publicly electronic companies from the 1996 to 2005 to examine the relationship between IC and company market value. The results observed that there is a significant and positive relationship between IC and company market value.

kamath (2008) carried out a study on 25 firms in the drug and pharmaceutical industry in India, for a period from 1996 to 2006 to examine the relationship between the intellectual components

namely human, structural and physical capital with the financial measures of performance of the company, namely profitability, productivity and market valuation. Under the study, correlation and simple linear multiple regression is done and VAIC methodology adopted. The findings that only human capital has the major impact on the profitability and productivity of the firms over the period rather than physical and structural assets in Indian pharmaceutical.

Clarke et.al (2010) carried out a study on Australian listed companies to explore the impact of intellectual capital on firm performance during the year 2004 to 2008. VAIC and its components have direct or moderating relationship with performance are analysed. The result observed that CEE has direct relationship with performance of Australian publicly firms while HCE has lesser impact on firm performance. There is possibility of moderate relationship between IC and financial capital. If a firm is able to use its IC more efficiently in one year, this can lead to a performance increase in the same year.

Kamal et.al (2010) carried out a study on 18 commercial banks of Malaysia which is listed on BNM to examine the relationship between the level of IC efficiency and banks performance during the year 2004 to 2008. VAIC

methodology is used. The findings show that VACA and VAHU have significant and positive relationship on banks performance while VASC has negative impact on banks performance in Malaysia.

Afroze (2011) carried out a study on private commercial banks of Bangladesh listed with Dhaka stock exchange limited to investigate the impact of intellectual capital on the financial performance of 13 banks during the year 1998 to 2009. VAIC methodology, correlation analysis and t-test is used to check the hypothesis. The results found that the significantly impact of IC on the financial indicators but no impact on the EPS and financial leverage.

Amitava et al. (2012) their studies examine the relationship between intellectual capital and financial performance of 65 Indian banks for a period of 10 yrs from 1999 to 2008. VAIC method is applied and multiple regression technique is used. The study explores the positive relationship between financial performance as measured by ROA, ROE and ATO and the intellectual capital performance of Indian banks. The results that human, structural and physical capital are important for enhancing banks productivity but SC, is least important as compared to human and physical capital. HC is

more impact on the profitability of the Indian banks.

Pal et al. (2012) carried out the studies on 105 pharmaceutical companies and 102 textiles companies to make a comparison of intellectual capital performance between Indian pharmaceutical and textile industry. VAIC methodology is adopted under this study and correlation or OLS regression models are used on panel data for the analysis. They observe that the profitability and IC are positively impact but no significant relationship is observed between IC with productivity and market valuation in both industries. VAIC in pharmaceutical and textile industry are significantly and positively explaining the profitability of the companies but no impact of IC performance on the productivity of the companies. IC has no impact on the market value of the industry.

Ekwe (2012) carry out a study on banks which are listed on Nigeria stock exchange to investigate the relationship between intellectual capital and physical capital of the bank and their effect on the financial performance of the banks during the year 2005 to 2007. VAIC methodology and multiple regression analysis are used. The findings show that IC has positive and significant impact on the financial performance. SC has negative impact on the

financial performance of the bank while HC and CE both have positively impact on the financial performance of the bank.

Peric et.al (2013) carried out a study on 32 small wood processing enterprises to examine the relationship between intellectual capital efficiency and financial performance during the period of 2010 to 2012. VAIC methodology and excel and statistic analysis is used. The findings show that no correlation between ROE and organization efficiency. The strong correlation is found between NPM and ROA while no correlation found between organizational efficiency and ICE.

Janosevic et.al (2013) carried out a study on 100 Serbian companies in real sector excluding the banking and insurance companies to examine the impact of intellectual capital on the financial performance of companies. VAIC methodology and multiple regression model is adopted. The findings that operating profit has strong correlation with HCE while has moderate correlation with SCE and CEE. ROE has correlates with all the elements of VAIC. ROA has positive and significant impact on SC and HC while CEE has not influence the ROA. ROE has significant impact only on the CEE.

Deep and Narwal (2013) carried out a study on Indian textile sector to examine the relationship

of IC with financial performance measures for a period of 10 years i.e 2002 to 2012. VAIC methodology, correlation and OLS regression is used. The findings of this study that textiles company has no significant impact on IC and productivity but has significantly and positively impact on the profitability. So, Indian textile sector is more impact on physical assets rather than intellectual capital. IC has no significant impact on the market value of the companies. It means investors do not consider the value of IC regarding their investment decisions.

Fathi et.al (2013) carried out a study on 49 Iranian companies listed in Trehan stock exchange to examine the relationship between intellectual capital and financial performance of the companies during the year 2001 to 2010. VAIC methodology and regression models are used. The results found that there is positive and significant impact of intellectual capital and value added of efficiency of SC on the ROE, ROA and GR. There is significant and positive relationship between CE and HC with the ROE and ROA and also VAIC is significant impact on the financial measures.

Djamil et.al (2013) carried out a study on 25 banking firms in Indonesia which is listed on IDX to examine the impact of IC on firms' stock return during the year 2005 to 2009. VAIC

methodology is used and also regression model is adopted to investigate the relationship between current and future stock returns and IC and its components. The results observed that IC does not impact on the current stock return but affect the stock return growth. The only HCE has positive and significant impact on the stock return.

Musali et al. (2014) in their studies examines the impact of intellectual capital performance of listed commercial banks in Saudi Arabia on the financial performance. The intellectual capital performance of banks is measured through VAIC methodology. This study shows that intellectual performance of Saudi banks is low but positively impact on the financial performance indicators of the banks and linear regression model is used and Saudi listed commercial banks are generally more efficient in creating value from its HC rather than CE and SC.

Sany, & Saarce Elsy Hatane (2014) carried out a study on banking companies listed in Indonesian stock exchange to explores impact of value added of intellectual capital to firms' profitability, ATO and employee productivity during the period 2007 to 2011. Using regression analysis and VAIC methodology, the result found that intellectual capital has positive and

significant impact on financial performance. VAIC and its components have significant impact on ROA. CEE has influence on profitability, employee productivity and assets turnover while IC has insignificant influence on assets turnover.

Ranani et.al (2014) carried out a study on listed companies in Trehan stock exchange to examine the impact of intellectual capital on financial performance of 70 companies during the year 2004 to 2007. VAIC methodology and panel data regression is adopted and results found that intellectual capital has significant influence on EPS but has no impact of SC on EPS. If the company increases physical capital then also increase in financial performance.

KharaI et.al (2014) carried out a study on oil and gas sector of Pakistan to investigate the impact of intellectual capital on the organizational performance. The sample was taken of 12 companies listed in Karachi stock exchange during the year 2005 to 2013. VAIC methodology, OLS, correlation and spss16 analysis are adopted. The results observed that all performance variables except sales growth are significantly correlated with each other. Overall, VAIC enhances firm financial performance and VAIC has provided evidence of a significant and positive beta with regard to

market to book ratio which indicates the capability of an organization to create future value.

Holienka et,al (2014) carried out a study on SMES to investigate empirically the relationship between IC and firm performance before and after the economic crisis in Slovakia during the year 2008 and 2011. VAIC and regression model are adopted. The result observed that IC components seem to a similar pattern when the firms' financial performance is aggregate with its overall VAIC. Theoretical grounding predict that the role of IC in SMES value creation should have increased after crisis but no empirical evidence found based on quantitative analysis.

Nuryaman (2015) in their study examines the impact of the intellectual capital on the firm's value with the financial performance as intervening variable. Under the study, 93 manufacturing companies which are listed in Indonesia stock exchange are taken. The study is used multiple regression and measure the market performance on the basis of price to book value. The observed that intellectual capital has a positive impact on firm value and profitability while profitability serves as an intervening variable in a casual relationship between intellectual capital and firm value.

kamath (2015) carry a study on manufacturing and service sectors which are listed on S & P BSE SENSEX index to examine the impact of the intellectual capital on the financial performance and market value of firms in India during the year 2008 to 2013. VAIC methodology and multiple regression analysis are used. The findings show that all the components of VAIC have shown some correlation with any of the dependent variables like MB, ROE, ROA and GS. VAIC has the positive impact on the profitability of the firms while SC has negative impact on the profitability of the firms. The overall IC efficiency has impact on profitability, productivity and market value.

Venugopal & Mv (2015) carried out a study on two major Indian industry like banking and information technology to examine the impact of the value creation efficiency of IC on corporate performance by using the VAIC method, correlation, SEM, PLS path modeling during the year 2000-2010. The results found that VACA has negative relationship with MCAP while has positive and significant relationship with ROE and ROA. The physical capital has correlation with ROE and ROA while HC has positive correlation with MCAP but SC has positive correlation with EPS and MCAP. The impact of

IC on corporate performance is found more on IT industry as comparison on banking industry.

Khan (2016) carried out a study on Indian IT industry to examine the relationship between IC components and performance of the company during the year 2006 to 2015. VAIC methodology, analysis of correlation and linear multiple regression are used. The findings show that HC and PC both has influence the profitability and productivity of the firms. VAHC has a positive and significant relationship with all dependent variables. The components of VAIC shows that more impact on ROE while less impact on ATO but no impact on MB.

Ozkan et al. (2016) in their studies are made to analyze the relationship between the Intellectual capital performance and Financial performance of 44 banks whose shares are traded in the Istanbul stock exchange (Borsa Istanbul), operating in turkey between 2005 and 2014. In the study, panel data regression analysis, which incorporates the horizontal section and time dimension are used. Under this, intellectual capital performance of banks is measured through the value added intellectual coefficient (VAIC) methodology. VAIC has not statistically significant effect on the financial performance of turkey banks but when VAIC is divided into its components, it can be find that CEE and HCE

positively affect on the financial performance of turkey banks. In fact, CEE has more influence on financial performance of banks rather than HCE.

Dzenopoljac (2016) carried out a study on serbian ICT companies to examine the relationship of intellectual capital and its components on financial performance of companies during the year 2009 to 2013. VAIC methodology is adopted and regression model is used by using SEM software (AMOS) and in depth analysis. The results found that CEE has significantly impact on financial measures of ICT companies and VAIC and its components have significant correlation with all selected dependent variables, physical and financial capital of the companies.

Sardo et.al (2017) carried out a study on non-financial listed firms of 8 European countries to examine the impact of intellectual capital on the financial performance. The eight countries are divided into 2 parts. VAIC methodology, longitudinal studies and econometric model like GMM estimators are used. The findings show that group1 indicates the VAIC components has positive impact on financial performance except SP while group2 indicates the VAIC components has negative impact on financial performance except SP. CEE has more impact

on firms financial performance in both group of companies. Therefore, IC increases firms' FP in both groups of countries.

In the above mentioned literature review, it has been observed that some study studies are showing positive association between dependent and independent variables and some studies are showing negative relationship. There are no concrete results pertaining to role of Intellectual capital on firms' financial performance and vice-versa, by which a theory can be formulated. So, this gap requires further research on these aspects. And also no such study has been conducted on manufacturing firms and sectors also in developing countries.

Conclusion:

This paper has presented the review of empirical studies conducted from intellectual and organizational performance perspective. The in-depth review of literature in this context shows that intellectual capital plays an important and fundamental role in the organizational performance and it is considered as the basic fundamental strategic knowledge based resource for any kind of organization. Thought the review of this literature proves that intellectual capital have significant positive impact on

organizational performance but a wide literature is present in the context of large organizations and is in western context, and thus this review also shows that there is lack of studies in the context of intellectual capital from developing countries context and more. Therefore the empirical studies should be encouraged in developing countries to conduct various studies in intellectual capital.

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