



## A COMPARATIVE EXAMINATION TO THE VALUE CREATION OF THE INDIAN COMPANIES IN THE KNOWLEDGE ECONOMY

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### **ABSTRACT**

*Stakeholders Value creation is one of the objectives of a business organization. However, the principle of shareholders value creation provides a framework, both conceptual and operational, for evaluating the performance of firms. In the knowledge economy the performance of a business organization is directly or indirectly influenced by the intangible or invisible assets which are popularly known as intellectual capital. In this study we try to find the effects of those assets in shareholders value creation. More specifically, in this paper an examination is made to find the importance of major resource bases towards shareholders value creation. For the purpose of this study data are collected from 100 Indian companies which are listed either in BSE or NSE for the period 2011 to 2015. In our study shareholders value creation is measured by Tobin's Q and ROE (return on equity) ratio. Profitability is also used to measure financial performance of businesses. Value creation efficiency of intellectual capital is measured by Pulic's VAIC<sup>TM</sup> model. Multiple regression analysis is used to analyze the data. The empirical results show that physical capital of Indian companies has significant contribution towards shareholders value creation than intellectual capital.*

**Key Words:** Intellectual Capital, Shareholders value, Panel Data Analysis, Indian Companies.

**Paper Type:** Research Paper

## **1. Introduction**

Corporate resources are classified in the resourced-based theory as tangible assets and intangible and personnel based (Grant, 1991). Tangible assets consist of financial resources and physical resources such as plant, property and equipment. In the knowledge economy, Intangibles or Intellectual resources play vital role from value creation to sustainability. These resources include technology, reputation, relation to stakeholders and employee capabilities and competencies. Intellectual resources are not productive on their own. They generally create value in association with tangible assets. The firm must be able to assemble, integrate and manage these bundles of resources.

In recent years, companies, especially those in the service industry, have experienced a dynamic and competitive environment. Competition at a cross-border scale compels domestic companies to adjust their competitive position by achieving sustainable financial performance. In the knowledge-intensive industries Intellectual Capital (IC) generally represents the critical resource in the value creation process.

The present study is the modest attempt of the researchers to investigate the association between value creation efficiency of major resource bases and stakeholders' value creation of Indian companies. For the purpose of the study two sets of companies are considered; traditional companies and another service companies. Traditional companies mainly reliant on the use of physical capital where as service companies use intangible assets extensively than physical capital. The objective of the study is to search the contribution of physical capital and intellectual capital towards corporate financial performance and shareholders value creation. The investigation is based on a sample of 100 Indian companies consisting of 50 traditional companies and 50 service companies.

The remainder of this paper contains a brief summery of the relevant literatures and the development of hypothesis. We then describe research method before analyzing and discussing results

## **2. Intellectual Capital**

The term 'intellectual capital' generally includes inventions, ideas, general know-how, design approaches, computer programs and publications. Thomas Stewart (1997) describes intellectual capital as "something that cannot be touched, although it slowly makes you rich". He defines it

as the sum of its human capital (talent), structural capital (intellectual property, methodologies, software, documents and other knowledge artifacts) and customer capital (client relationship).

IC experts try to segregate all components of intellectual capital into different similar groups like human, organizational/structural and customer or relation resources. One of the most popular models for classifying intellectual capital(IC) is the Saint-Onge, H. (1996) model developed in the early 1990s. It divides intellectual capital into three parts: Human capital, Structural capital; and Customer capital. Dr. Nick Bontis (1998, 2000) re-states customer capital as relational capital to include relationships with suppliers.

Human capital is recognized as the largest and the most important intangible asset in an organization. Ultimately it provides the goods or services that customers require or the solutions to their problems. It includes the collective knowledge, competency, experience, skills and talents of people within an organization. It also includes an organization's creative capacity and its ability to be innovative. Although investment in human capital is growing, there is still no standard measure of its effectiveness in companies' balance sheets.

Structural capital is the supportive infrastructure for human capital—it is the capital which remains in the factory or office when the employees leave at the end of the day. It includes organizational ability, processes, data and patents. Unlike human capital, it is company's property and can be traded, reproduced and shared by, and within, the organization.

Relational capital is a company's relationship with its customers and with its network of suppliers, strategic partners and shareholders. The value of these assets is determined by the company's reputation or image (MERITUM guidelines).

Value is derived from the combinatorial use of these three categories of resources with the physical and monetary resources. Therefore correct models of physical, organizational and relationship resources are necessary for human resources to create value. An individual can have a high level of competence, but if the organization is poorly structured and lacks tools to facilitate the deployment of this competence, the overall value creation from the intellectual capital will not be maximized (Goran Roos, 2003)

### **3. Hypothesis Development**

In reality the wealth of modern economy no longer depends upon Physical assets rather intangibles assets become very vital resources for value creation. Various theoretical and empirical researches highlighted that intellectual capital is associated with the main source of

individual, organizational as well as national competitive advantage in today's economy. IC Researchers also believe that intellectual capital can be used for improvement of business profitability and to enhance corporate value also. Intellectual capital includes human capital and structural capital, which can be further divided into organizational capital and relational capital. Human capital represents individual knowledge stock of employees of an organization (Bontis et al., 2000). According to Roos et al., (1997) employees generate IC through their competence, attitude and intellectual agility. Structural capital or organizational capital can be defined as the knowledge that stays within the organization when employees go home. It comprises databases, organizational charts, routines, charts and anything whose value to the company is higher than its material value. The main theme of customer capital is the knowledge embedded in the company's relation with stakeholders and the perceptions that they hold about the company. Riahi-Belkaoui (2003) mentioned that intellectual capital is the only resources that satisfy the characteristic of strategic assets like valuable, rare, imperfectly imitable and hardly substitutable and capable of generating sustainable competitive advantage. Last few years several empirical studies are conducted to find out the strategic importance of intellectual capital on corporate financial performance. One of such study was conducted by Bontis et al (2000), with the aim to investigate the three components of intellectual capital, i.e. human, structural and customer capital in the service and non-service industries in Malaysia and business performance. The study revealed that structural capital has great influence on business performance of both industries. Human capital also important in both the industries, but it had greater influence on the structure of a non service- based than a service-based firm. The study result of Hitt et al. (2001) proved the role of intangible capital more dominant compare with tangible capital. Another research in Bangladeshi context indicates that intellectual capital recognized as important resources for organizational efficiency and productivity as compared to physical capital and financial capital (Najibullah, 2005). In an another study conducted by Iswari and Anshori (2007) to investigate the influence of intellectual capital on Indonesian insurance company's financial performance and empirical results prove that intellectual capital influences corporate financial performance.

Based on above literature reviews, we can hypothesize that;

H<sub>1</sub>: Intellectual Capital has influence to corporate financial performance in Indian companies

Baruch Lev (2003) states that in efficient capital market investors can reasonably price the listed companies using the information about intellectual capital. Pulic (2000) finds positive relation

between market value added (MVA) and intellectual capital of 30 'FTSE 250' companies. Lev and Radhakrishnan (2003) finds that organizational capital has some explanations to the firm's market value. Firer and Williams (2003) empirically investigated the association between intellectual capital and market value of firms using data from 75 publicly traded companies in South Africa. Their result showed that physical capital can significantly positively influence firms' market value, but human capital has a significant negative effect on market value and the relationship between structural capital and market value isn't statistically significant. Chen et al. (2005) also analyzed the relationship between intellectual capital and corporate value, but they used a sample of listed companies from Taiwan during 1992-2002. They found that although physical capital and intellectual capital both have significant positive effects on corporate value, but the effect of physical capital is much larger than that of intellectual capital. Tseng et al. (2005) measured four types of intellectual capital (i.e. human capital, organizational capital, innovative capital and relational capital), and investigated the influence of intellectual capital on corporate value. They found that innovative capital and relational capital positively affect corporate value directly; human capital and organizational capital affect corporate value indirectly. And the roles of these types of intellectual capital on corporate value vary with different industries. Shiu (2006) applied a quantile regression method to re-examine the relationship between intellectual capital and market value using data from listed companies of Chinese Taiwan in 2003. He finds that intellectual capital does have a significant positive role on market value, but the strength and significance of the roles vary with different firms' market value level. Above discussions lead us to the following hypothesis, that is:

H<sub>2</sub>: Intellectual Capital has influence to Indian companies' shareholders value creation.

#### **4. Sample**

The data used in this empirical study are collected from published annual reports of respective company and from Capitaline Database. Market related data are collected from annual reports and respective stock exchange at which the company is listed. The study confined to 100 Indian companies for the period 2011 to 2015. The sample companies constitute 50 traditional companies and 50 knowledge intensive companies. The companies selected in this study are leader in their respective businesses and are listed in the Indian stock market (BSE and/or NSE).

## 5. Research Methodology

### 5.1. Regression models

Model 1, Model 2 and Model 3 are regression equations for above mentioned hypothesis. These regression equations are used to examine the relationships between Return on assets, Return on equity and Tobin's Q and the major two components of intellectual capital measure i.e., VAIC<sup>TM</sup>. The regression equations are as follows:

Model 1:

$$ROA = \alpha + \beta_1 (ICE) + \beta_2 (CEE) + \beta_3 (PC) + \beta_4 (DER) + \beta_5 (SIZE) + \varepsilon$$

Model 2:

$$ROE = \alpha + \beta_1 (ICE) + \beta_2 (CEE) + \beta_3 (PC) + \beta_4 (DER) + \beta_5 (SIZE) + \varepsilon$$

Model 3:

$$TOBIN = \alpha + \beta_1 (ICE) + \beta_2 (CEE) + \beta_3 (PC) + \beta_4 (DER) + \beta_5 (SIZE) + \varepsilon$$

### 5.2. Variable definitions

#### 5.2.1. Measurement of Dependent variables:

For the purpose of conducting the empirical analysis in the present study Return on assets (ROA), is used to measure corporate profitability. Tobin's Q is very popular measure in terms of shareholders value creation. In addition to this return on equity is also used to measure shareholders value creation. At the moment, there is no specific theoretical perspective or adequate empirical evidence that supports the superiority of any specific proxy measure over the others. It is, therefore, decided that for the purposes of the present study, the commonly used proxy measures will be applied. Consequently, the proxy measures for each dependent variable are defined as follows:

- (1) Return on assets (ROA): - Return on assets measured as the ratio of the net income (less preference dividends) divided by the book value of total assets, shows the degree to which a firm's revenues exceed over cost ( Williams and Firer,2003; Chen, Cheng and Hwang ,2005).
- (2) Return on equity (ROE): - Measured as the ratio between the net incomes (less preference dividends) divided by the book value of total equity, it shows the earnings available to the equity

shareholders and is generally considered an important financial indicator for investors (Syed Najibullah, 2005).

3) Tobin's Q (TOBIN): This measure is used as a measure of shareholders' value creation. It is the most appropriate measure of value creation and calculated as the ratio of market value of assets to replacement cost of those assets. For our research purpose, we used a general measure of Tobin's Q ratio (TOBIN) defined as {market value of equity + book value of preferred stock + book value of debt}/ book value of assets. Here, market value of equity is calculated by multiplying average market price of the share with total number of outstanding shares.

### 5.2.2. Measurement of independent variables

VAIC<sup>TM</sup> is a measure for corporate intellectual ability (Pulic, 2000b), providing an easy-to-calculate, standardized, and consistent basis of measure, enabling effective comparative analyses across firms. Data used in the calculation of VAIC are based on financial statements. The procedures calculating VAIC are as follows:

VAIC<sup>TM</sup> i = CEE i + ICE i ; ICE i = HCE i + SCE i, where

VAIC<sup>TM</sup> = VA intellectual coefficient for firm i;

CEE i = VA i /CE i , indicator of VA efficiency of capital employed for firm i.

HCE i = VA i /HC i; refers to indicator of VA efficiency of human capital for firm i;

SCE i = SC i /VA i; refers to indicator of VA efficiency of structural capital VA for firm i;

VA i = Output – Input (Total Income – Operating Expenses excluding Salaries and employee benefits)

CE i = book value of the net assets for firm i

HC i = Salaries and employee benefits for firm i;

SC i = VA i - HC i structural capital for firm i.

### 5.2.3. Control variables

For the purpose of empirical analysis this study uses correlation and multiple regressions as the underlying statistical tests. In conducting the liner multiple regressions analyses following control variables are have been included to segregate the influence of intellectual capital.

1. Size of the Firm (SIZE): - Size of the firm as measured by the natural log of total sales is used to control for the impact of size on wealth creation through economies of scale, monopoly and bargaining power (Chandler, 1990; Porter, 1980, Riahi-Belkaoui, 2003).

2. Leverage (DER): -Financial leverage and debt structure as measured by total debt divided by book value of total assets is used to control for the impact of debt servicing on corporate performance and wealth creation (Riahi-Belkaoui,2003).

3. Physical capital intensity (PC): Physical capital intensity as measured by a ratio of a company's fixed assets to its total assets (Firer and Stainbank, 2003; Firer & Williams, 2003 ;) is used to control for the impact of fixed assets on corporate performance. The assumption is that company's fixed assets have significant impact on company's financial performance.

### 6. Linear Multiple Regression Results

**Table: 1; Multiple Regression Results of Profitability (Dependent Variable-ROA)**

Independ ent and Control variables	2011		2012		2013		2014		2015	
	beta value	t- value	beta value	t- value	beta value	t- value	beta value	t- value	beta value	t- value
Intercept	0.043	0.135	0.126	0.509	-0.699	-1.526	0.109	0.638	-0.471	-0.817
ICE	0.029	0.223	-0.155	-1.556	-0.161	-1.306	0.125	1.546	-0.412	-2.65**
CEE	0.419	3.678*	0.490	5.330*	0.408	3.149*	0.766	9.201*	0.549	4.263*
PC	0.224	1.95***	0.254	2.278*	0.292	2.674*	0.195	2.30**	0.478	3.670*
DER	-0.434	-3.337*	-0.560	-5.393*	-0.013	-0.108	-0.197	-2.37**	-0.006	-0.044
LTA	0.031	0.224	0.015	0.141	0.252	1.77***	0.006	0.072	0.131	0.822
Adj. R <sup>2</sup>	0.413		0.622		0.453		0.686		0.663	
Std. Error	0.11803		0.09416		0.16125		0.144		0.135369	
F-Value	7.894*		17.102*		9.117*		22.381*		12.391*	

Here, \*, \*\* & \*\*\* represent 1%, 5% & 10% significance level respectively



**Table: 2; Multiple Regression Results of Shareholders Value****(Dependent Variable-ROE)**

Independent and Control variables	2011		2012		2013		2014		2015	
	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value
Intercept	-0.103	-0.25	0.462	1.352	-2.708	-1.7***	0.074	0.063	5.905	1.374
ICE	0.041	0.316	0.076	0.623	-0.176	-1.237	-0.011	-0.079	0.100	0.496
CEE	0.351	2.63**	0.402	3.584*	0.339	2.25**	0.268	1.95***	0.260	1.55***
PC	0.202	1.515	0.230	2.027**	0.535	4.227*	0.370	2.632**	0.441	2.611**
DER	-0.233	-1.534	-0.541	-4.271*	0.277	1.980**	-0.140	-1.025	-0.188	-0.990
LTA	0.108	0.673	-0.089	-0.678	0.221	1.344	-0.022	-0.154	-0.328	-1.587
Adj. R <sup>2</sup>	0.201		0.436		0.266		0.141		0.433	
Std. Error	0.148985		0.1257		42.11		0.98		1.00975	
F-Value	3.460*		8.584*		4.560*		2.606**		5.420*	

Here, \*, \*\* & \*\*\* represent 1%, 5% & 10% significance level respectively

**Table: 3; Multiple Regression Results of Shareholders Value****(Dependent Variable-TOBIN'S Q)**

Independent and Control variables	2011		2012		2013		2014		2015	
	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value
Intercept	37.730	2.669*	18.598	0.904	98.965	1.365	2.424	0.498	-7.073	-0.400
ICE	0.156	0.955	-0.161	-1.097	-0.010	-0.057	-0.052	-0.540	-0.431	-2.223
CEE	0.147	0.39**	0.241	1.716**	-0.281	-1.573	0.731	7.415*	0.521	3.252*
PC	-0.192	-1.331	0.170	1.193	-0.060	-0.400	0.158	1.569	0.393	2.426**
DER	-0.218	-1.332	-0.352	-2.22**	-0.079	-0.477	-0.138	-1.360	0.054	0.298
LTA	-0.412	-2.384	-0.104	-0.632	-0.231	-1.184	0.003	0.029	0.088	0.444
Adj. R <sup>2</sup>	0.068		0.119		0.239		0.559		0.478	
Std. Error	47.05713		7.5721		25.27222		4.13159		4.1553	
F-Value	1.710		2.324**		0.636		13.414*		6.304*	

Here, \*, \*\* & \*\*\* represent 1%, 5% & 10% significance level respectively

Tables 1 to 3 reveal the multiple regression results between the dependent and independent variables for the study period i.e., 2011 to 2015 of 50 traditional companies. Each table represents the association between two components of VAIC with the financial indicators measured by return on assets (ROA), return on equity (ROE), and Tobin's Q (TOBIN).

Statistical values such as standardized coefficient ( $\beta$ ), coefficient of determinations ( $R^2$ ) and F-value are used to illustrate the predictive capability and explanatory power of models.

From the regression results of Table -1, it is seen that coefficients of CEE (capital employed efficiency) and PC (physical capital intensity) are statistically significant and positively related to ROA and among the two components of VAIC (viz, ICE and CEE) CEE has greater explanatory power than ICE. Therefore, CEE is the dominant component in VAIC when predicting profitability of traditional companies. This result is consistent with the study results of Chen et al., (2005) and Ting and Lean (2009) where sample companies are taken from Malaysia. Present study shows limited association between ICE and corporate financial performance as measured by return on assets. Similar results were found by Chan (2009b) on his study conducted on Hong Kong based sample companies. From the findings of this study it can assume that physical assets are considered as strategic assets for enhancing profitability of sample traditional companies.

The multiple regression results of shareholders value creation as measured by return on equity (ROE) and Tobin's Q and independent variables are summarized in Tables 2 and 3 respectively. From the results in Table-2, it is seen that CEE and PC are statistically significant predictor for ROE. The regression results in Table-3 show that only CEE is statistically moderate predictor for TOBIN's Q. The study results provide the strongest evidence that physical and financial capital of sample companies are playing important role in profit generation and shareholders value creation for Indian traditional companies in compared to other resources like intellectual capital (IC). It also indicates that the management of sample companies is very much guided by the deployment of physical assets in creating shareholders value.

The control variables, i.e., firm size and leverage are not found any significant association with business performance in any model.

Tables 4 to 6 contain the empirical results relating to 50 knowledge companies. Table 4 shows multiple regression results of profitability as measured by ROA of Sample companies for the period 2011 to 2015. Research results show that t-values of ICE are significant in all study periods. Physical capital and size of the sample companies significantly and positively influence the profitability also but not consistently. However, the association between profitability and debt structure of sample companies is negative. Independent and control variables are collectively explain 12% to 25% variance in return on assets which are statistically significant.

**Table: 4; Multiple Regression Results of Profitability (Dependent Variable-ROA)**

Independent and Control variables	2011		2012		2013		2014		2015	
	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value
Intercept	0.047	0.460	-0.003	-0.049	0.058	0.820	0.224	0.445	-0.056	-1.393
ICE	0.318	2.770*	0.195	1.975**	0.126	1.051**	0.236	1.297*	0.157	1.642**
CEE	0.201	1.611	0.437	4.037*	0.002	0.025	0.053	0.513	0.547	7.209*
PC	0.012	0.105	0.015	0.663	0.013	0.171	-0.114	-1.057	0.028	0.365
DER	0.142	1.193	-0.245	-2.227	-0.357	-3.045*	-0.094	-0.760	-0.293	-3.211*
LTA	0.107	0.967	0.212	2.190**	0.111	1.031	0.023	0.190	0.257	0.465
Adj. R <sup>2</sup>	0.278		0.332		0.130		0.126		0.27196	
Std. Error	0.09710		0.0906		0.1307		0.8668		19.982*	
F-Value	2.312**		8.598*		4.293*		1.406*			

Here \*, \*\*, \*\*\*, represent 1%, 5% & 10% significance level respectively.

**Table: 5; Multiple Regression Results of Shareholders Value****(Dependent Variable-ROE)**

Independent and Control variables	2011		2012		2013		2014		2015	
	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value
Intercept	0.069	0.661	0.001	0.011	0.061	0.667	0.328	0.441	-0.077	-1.267
ICE	0.174	1.514**	0.165	1.574**	0.232	1.255*	0.130	1.247	0.145	2.411*
CEE	0.279	2.237*	0.410	3.279*	0.017	0.176	0.027	0.260	0.424	4.579*
PC	-0.110	-0.983	0.011	0.097	0.092	0.298	-0.112	-1.033	0.003	0.028
DER	0.260	2.186**	0.157	1.248	-0.062	-0.499	-0.057	-0.464	0.056	0.504
LTA	0.051	0.463	0.211	1.88***	0.108	0.948	0.022	0.180	0.290	2.734*
Adj. R <sup>2</sup>	0.178		0.112		0.108		0.134		0.202	
Std. Error	0.14649		0.112244		0.1661		1.2786		0.1088	
F-Value	2.307**		2.918**		1.171*		2.294*		6.533*	

**Table: 6; Multiple Regression Results of Shareholders Value****(Dependent Variable-TOBIN'S Q)**

Independent and Control variables	2011		2012		2013		2014		2015	
	t-value	beta value	t-value	beta value	t-value	beta value	t-value	beta value	t-value	beta value
Intercept	-2.649	-1.880**	-1.630	-0.225	-0.508	-0.391	-0.654	-1.564	-1.287	-2.115
ICE	0.136	1.339**	0.029	0.239	0.162	1.973**	0.124	1.155*	0.282	1.775
CEE	0.260	2.264**	0.015	0.112	-0.027	-0.280	0.324	3.499*	0.354	3.899*
PC	-0.035	0.344	0.075	0.627	0.162	1.581	0.110	1.137	0.155	1.696
DER	-0.127	-1.163	0.139	1.019	-0.196	-1.611	-0.184	-1.668	-0.181	-1.650
LTA	0.392	3.850*	0.032	0.267	0.269	2.408**	0.347	3.175*	0.365	3.509*
Adj. R <sup>2</sup>	0.220		0.246		0.257		0.179		0.233	
Std. Error	2.0091		2.32997		2.359		1.7651		1.9261	
F-Value	5.353*		3.333*		2.320**		5.676*		7.6381*	

Here \*, \*\*, \*\*\*, represent 1%, 5% & 10% significance level respectively.

The regression results of ROE are presented in table 5 and it is seen that ICE and CEE are significantly influence dependent variable in three years out of five years. Independent and control variables can explain only 10 to 20% variance of the dependent variable.

Table 6 presents multiple regression result of Tobin's Q, measure of shareholders value creation. From the results it is seen that ICE of sample companies significantly influence Q ratio in three years out of five study periods. Debt – equity ratio has significant negative association with Q ratio. We also find significant and positive association between CEE and Q ratio in the year 2011, 2014 and 2015. Size of the companies as measured by natural log of total assets has significant positive association in four out of five study periods. ICE, which indicates the extent of corporate intellectual ability affects profitability in all study periods and that of Q ratio and ROE in three study periods out of five study periods.

Overall, CEE is found to be the best predictor for the shareholders value creation of Indian traditional companies than ICE. This finding is consistent from the traditional accounting point of view that physical and financial assets are critical when evaluating business performance. The

findings of Ferrer & Williams (2003), Ting & Lean (2009), Chu et al, (2011) support this argument because their study results revealed that physical capital are importantly utilized in generating high value returns. However, in case of service companies intellectual capital and physical capital are considered as important assets for value creation.

## **7. Conclusions**

Today, firm value is based not only on physical capital. Intangible assets such as intellectual capital have always existed, however it is only recently that the accounting profession has seriously attempted to define, disclose, and measure them. As such, the nature of the relationship between intellectual capital and firm performance varies from country to country. Studies have investigated this relationship in various countries using various measurement tools. VAIC is one of these tools, providing easy access to information on a firm's intellectual capital efficiency.

The principal purpose of the present study is to investigate the relationship between performance of intellectual capital in Indian companies mainly reliant on fixed capital and two dimensions of financial performance. The two dimensions of company financial performance are profitability and shareholders value creation. Overall, the empirical findings, based on correlation and linear multiple regression analysis indicates the association between the efficiency of value added by a firm's major resource components and the three traditional dimensions of corporate performance is limited and mixed. In general, empirical findings suggest that despite efforts to improve its intellectual capital base the business environment in India still appears to place greater weigh to corporate performance based on physical capital assets. Therefore, besides intellectual capital physical capital still important assets for value creation to Indian traditional companies. In service industries intellectual capital plays a significant role for value creation

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