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RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE OF BANKING COMPANIES IN INDIA- AN EMPIRICAL ANALYSIS

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ABSTRACT
Knowledge is an important aspect which creates competitive advantage for companies and also bring in long term sustainability .Value creation capability of Indian financial sector is highly influenced by human capital, Innovations and technological change. Knowledge economy means use of intellectual capacity as the main driver for the growth of the economy.. Focus has shifted from tangible assets to value of intangible assets in determining the true value of the firm. This paper tries to analyse role of intellectual capacity on the financial performance of banking companies in India. Intellectual capacity is examined using Value added intellectual coefficient (VAIC) measured by capital employed efficiency, human capital efficiency and structural capital efficiency. Regression model is used to analyze impact of VAIC on stock returns , share prices and net profit of selected banks . Sample data for a period of two years are taken from selected banking companies and the result shows that intellectual capital has positive impact on companies' performance.
Keywords: Knowledge Economy, Intellectual Capital, Structural Capital Efficiency

Introduction
Intellectual capital and its contribution to knowledge economy is a relevant topic of discussion among academicians and economists recently. Development of technology and the transition towards digital economy has paved way for booming interest in intellectual capital. India has a long way to go in utilizing its resources for achieving knowledge economy. Intellectual capital of a company is the value of company's employee knowledge, skills and training, which gives the company a competitive advantage. Old economy focuses on physical assets and equity while new economy focuses on the human capital and thereby creation of intellectual value addition. Knowledge economy is based on the value creation capability of a knowledge-based resources and activities of a country. Educated labor force, information infrastructure, intangible assets, technology innovations are the key elements of knowledge economy. Role of Human assets of a company is always a topic of discussion especially in this era where companies strive to get competitive advantage through innovations, creativity and technological development.
Significance of the study

In the context of striving for knowledge economy, a developing country like India should focus on deploying more intellectual capital in various sectors of economic growth. Growth of banking sector in India over the past few years is highly appreciated as it has been a major player in contributing towards economic growth. Hence the role played by intellectual capital of banking companies and its impact on financial performance is a matter of discussion. The significant point is whether success of a company depends upon the performance of knowledge workers or not. Is human capital play a major role in enhancing the profitability and return. This paper provides an insight for investors on considering intellectual capital as an important source for competitive advantage.

Literature Review

There are various studies conducted on the concept of intellectual capital and its role in creating market value for companies. The definition of intellectual capital has also been gone through several restructuring until many researchers identified some common elements. According to Mosavi et.al (2011) in his study explains value added components of IC and its relationship with economic success of listed companies in Iran. 80 Iranian companies from different industries are selected and impact of IC on market to book value and return on equity is studied. Maditinos et.al (2011) in his paper analysed the impact of IC on firms' market value with special focus on companies in Greece. Value added intellectual coefficient methodology is adopted. Celenza and Rossi (2012) tries to find out the relationship between intellectual capital and stock market performance evidence from Italy. The study shows that VAIC establishes a direct relationship with return on equity. human capital. Relational capital and structural capital is taken as the components of intellectual capital. Djamil et.al (2013) examined the relationship between IC and Indonesian stock return. The findings shows that intellectual capital does not impact current stock returns but it affects the overall growth of the industry. Iranmahd et.al (2014) explains the effect of IC on cost of finance and firms value by taking evidences from Tehran stock exchange for a period of eight years. Results shows that there is negative influence of IC on cost of capital and firms value. Weqar et.al (2020) tries to explore the impact of IC on financial performance of selected companies from bombay stock exchange. The result shows that all components except capital employed efficiency all other components have insignificant impact on the profitability of the firms. Raman Deep and Karam Pal (2015) in their paper intellectual capital and its impact on company's performance found out that there is least role played by structural capital efficiency. Human capital efficiency is positively associated with financial performance of the companies. Amitava and Santanu (2012) analysed the impact of IC on financial performance of Indian banks. The study results shows that the bank's intellectual capital is vital in creating competitive advantage. Tan et.al (2007) analysed the impact of IC on financial performance of various companies and concluded that the impact various according to the type of industries. Nik Muhammed and Khairu Amin (2009) assessed the role of intellectual capital on firms' performance Malaysian companies. Results shows that banking sector relied more on intellectual capital followed by insurance sector and then broking firms. It was also found that IC has positive impact on profitability and return on assets. Kianto et.al (2013) analysed the impact of intellectual capital management on company competitiveness.

Results demonstrate the importance of a systematic management of organisational knowledge for the company bottom line. Ranjith Appuhami (2007) in his study found of that there is significant positive relationship between IC and investors capital gain on shares. Jan Mouritsen (2002) gives an overview on intellectual capital and the capital market and circulability of intellectual capital.

Conceptual Framework

This section explains the concept of Intellectual Capital (IC) its evaluation methodologies and the hypothesis developed to know the relationship between IC and financial performance of selected companies .

Literatures prove that conservative accounting practices failed to account the intangible assets of an organization . According to IFRS and implementation of international accounting standards by countries has led to giving more credit to intangible assets in calculating the value of the firm . Edvinsson (1997) exhibited in his study the market value of a company is based on both financial capital and intellectual capital . Financial capital includes monetary capital and physical capital while intellectual capital consists of human capital and structural capital like innovation capital , customer capital , intellectual property , intangible assets .

The methodology developed by Ante Pulic (1998) seems to be widely accepted one and hence this study focus on measuring Value added intellectual capital (VAIC) and its components . VAIC includes three major components capital employed efficiency (VACA) human capital efficiency (VAHC) and structural Capital efficiency (STVA). But the significance of each component in contributing towards intellectual capital is still questionable. Studies shows that it also varies according to according to industries .

Evaluation Method of IC components

According to Riahi -Belkaoui (2003) Value added components of a company for a period can be calculated using the following formulae

VA = DP + W+ I + D+ T + R

This shows the distribution of value addition among all the stakeholders of the company . For employees (salaries and wages) ,for Debt holders (interest), for Government (tax), for shareholders (dividend , retained earnings and depreciation) . All the calcualtions are made for a specific period “t”.

According to Pulic (2000) , following methods are used to find out 3 components of VAIC

1) VACA = VA/CA

CA = Capital employed by the company for a specific period

2) VAHC = VA/HC

HC = Investment in human capital (ie total of salary , wages and other incentives to employees)

3) STVA = SC/VA

SC = VA minus HC

4) VAIC = VAHC + VACA + STVA

Objectives of the study

1. To analyse the major contributing factor of intellectual capital with special reference to banking companies in India

2. To examine the impact of intellectual capital on performance of banking companies

Research Methodology

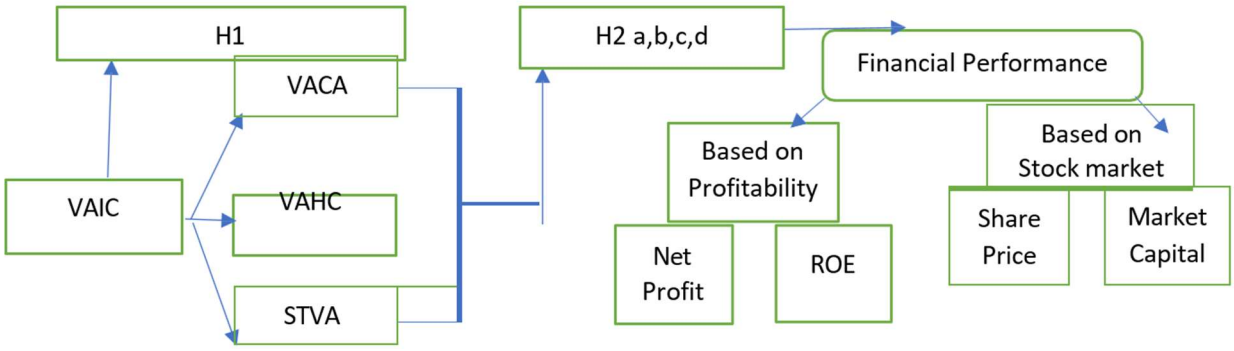
This study tries to analyse the significance of IC components in framing the model with special focus on banking companies. Also tries to evaluate the impact of IC components in improving the financial performance of banking companies. The financial performance of a banking company is evaluated based on three ratios 1) net profit 2) share price 3) Return on equity 4) market capitalization. The relationship between each component of IC on the above said factors, is the focus of this paper.

Sample data is taken for a three-year period 2021, 2022 and 2023. Required data is taken from financial statements of 35 banks listed in National stock exchange which constitute the sample size. Tools used for analysis include descriptive statistics like mean, standard deviation and percentages. Correlation is used to analyse the association between variables and impact of independent variable on dependent variable is studied using multiple regression. VAIC, VACA, VAHC and STVA are taken as independent variables and net profit, share price, return on equity and market capitalization is taken as dependent variables.

Following are the hypothesis framed

1. H1: There is positive relationship between components of IC and value-added intellectual capital
2. H2a: Banks with greater IC will have greater financial performance
3. H2b: Banks with greater capital employed will have greater financial performance
4. H2c: Banks with greater human capital will have greater ROE and Net profit
5. H2 d: Banks with greater structural efficiency will have greater ROE and Net profit

Research Framework



Analysis and Discussions

This section tries to analyse the role played by intellectual capital to enhance the financial performance of selected banks. Financial performance is based on four elements Net profit and Return on Equity (profitability aspects) and Share Price and Market capitalization (stock market aspects). Model 1 shows the relationship between each component of VAIC on the intellectual capital. Table 1 shows that standard deviation is more for human capital and intellectual capital.

Table 2 shows the correlation between independent variables. It can be noted that value added capital employed has negative correlation with other variables. Hence VACA cannot be considered as a major component of VAIC as far as Indian banking companies are considered. Human capital component (VAHC) is positively correlated with intellectual capital followed by structural component. Human capital is 97% related to intellectual capital while structural component is 66%.

Table 1 : Descriptive Statistics of independent variables

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	N	Minimum	Maximum	Mean	Std. Deviation
VACA	35	.05	.73	.0895	.11582
VAHC	35	1.47	9.80	5.0784	1.79756
VASC	35	.32	.90	.7599	.12931
VAIC	35	2.02	10.76	6.0270	1.81356
Valid N (listwise)	35				

Table 2 : Correlations between independent variables					
		VACA	VAHC	VASC	VAIC
VACA	Pearson Correlation	1	-.096	-.101	-.058
	Sig. (2-tailed)		.582	.562	.742
	N	35	35	35	35
VAHC	Pearson Correlation	-.096	1	.616**	.979**
	Sig. (2-tailed)	.582		.000	.000
	N	35	35	35	35
VASC	Pearson Correlation	-.101	.616**	1	.657**
	Sig. (2-tailed)	.562	.000		.000
	N	35	35	35	35
VAIC	Pearson Correlation	-.058	.979**	.657**	1
	Sig. (2-tailed)	.742	.000	.000	
	N	35	35	35	35
**. Correlation is significant at the 0.01 level (2-tailed).					

From the above analysis it can be concluded that capital employed efficiency has less correlation with intellectual capital of a banking firm. Major contributors of intellectual capital are human capital and structural capital. Hence H1 hypothesis is partially accepted. There is significant relationship between human capital and IC also between structural capital and IC but there is no significant relationship between capital employed and IC. Table 3 exhibits the correlation between independent variables and dependent variables. It can be noticed that VAHC and VAIC is highly

correlated with Return on Equity (ROE). VASC is marginally correlated. But both the three components are highly correlated with net profit. They are least correlated with market capitalisation.

Table 3: Correlation between Independent and Dependent Variables

		ROE	NETPROFIT	Share Price	Market cap
VAHC	Pearson Correlation	.824**	.781**	.498**	.187
	Sig. (2-tailed)	.000	.000	.002	.283
	N	35	35	35	35
VASC	Pearson Correlation	.440**	.779**	.220	.168
	Sig. (2-tailed)	.008	.000	.203	.336
	N	35	35	35	35
VAIC	Pearson Correlation	.823**	.823**	.474**	.185
	Sig. (2-tailed)	.000	.000	.004	.287
	N	35	35	35	35

Source : Extracted from SPSS

Regression model to analyse the impact of IC on Financial Performance

This section examines the impact of intellectual capital on selected indicators of financial performance . VAIC is taken as independent variable and ROE, NP , Share price and Market capitalisation as dependent variables. Table 4 shows the impact of VAIC on selected indicators. It can be noted that dependent variables ROE , Net Profit (NP), are highly influenced by VAIC with an regression value .75 and .82 respectively. (Pvalue <.05). Adjusted R2 shows that 56 percent of variation in ROE can be explained by VAIC and 66 percent variation in net profit can be explained by VAIC. The impact of VAIC on share price seems to be marginal at 5% level of significance (P value <.05). The impact of VAIC on Market capitalisation is very poor as the test result shows that the model is insignificant with P value > .1

Table 4: VAIC and Indicators of financial performance

	R	Adjusted R^2	T statistic	Sig
VAIC and ROE	.758	.561	6.67	.000
VAIC and NP	.823	.667	8.31	.000
VAIC and SP	.474	.202	3.09	.004
VAIC and MC	.185	.005	1.08	.287

Regression model to analyse the impact of Components of VAIC on ROE and Net Profit This section discuss the impact of three components of VAIC on selected two indicators of financial performance . Since in the above section it was noticed that VAIC has less impact on stock market indicators , this section considers only the profitability indicators which are more dependent. Table 5 shows the impact of independent variables on return of equity . Regression values is .77 which is significantly important at 1% level of significance since P value <.01.

Table 6 shows the impact of each component on ROE and its significance. It can be noted that human capital has highest beta coefficient which shows it is the major influencer of return on equity when compared to other two factors .

Table 5 : Model Summary VAIC and ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F statistic	Sig
1	.770[a]	.592	.553	.88408	15.023	.000
a. Predictors: (Constant), VACA, VAHC, VASC						

Table 6 : Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.056	.938		.059	.953
	VAHC	.666	.107	.905	6.211	.000
	VASC	-2.739	1.490	-.268	-1.837	.076
	VACA	-.052	1.317	-.005	-.039	.969
a. Dependent Variable: ROE						

Table 7 shows the degree of influence of components of VAIC on Net profit of the banks. It can be noted that independent variables influence the dependent variable net profit to a great extent of .872 . Adjusted R2 explains that 73 percent of variation in net profit can be explained by components of VAIC. (P value< .01). Table 8 shows the regression coefficients and shows that human capital and structural capital influences the net profit of the company(Pvalue <.01) while the impact of capital employed is insignificant (P value >.1)

Table 7 : Model Summary of VAIC and Net profit

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F statistic	Sig
1	.872[a]	.761	.738	5.41897	32.88	.000
a. Predictors: (Constant), VACA, VAHC, VASC						

Table 8: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.363	5.752		-.063	.950
	VAHC	2.831	.657	.481	4.309	.000

	VASC	38.834	9.136	.475	4.251	.000
	VACA	-7.798	8.073	-.085	-.966	.342
a. Dependent Variable: NETPROFIT						

Conclusion

This paper examines the impact of VAIC and its different components on selected indicators of financial performance of banking companies listed in NSE. Results shows that hypothesis H1 is partially accepted. There is positive relationship between VAHC and VASC on VAIC of the banks . But VACA has no positive relationship with VAIC. Thus it can be concluded that in case of banks in India the major determinants of intellectual capital is human capital and structural capital. Hypothesis H2 is true with respect to two indicators return on equity and net profit but not true with respect of stock market indicators stock return and market capitalization . Results shows that banks with greater IC will have greater ROE and Net profit but IC does not influence the stock market return and market capitalization. Hypothesis H2 b is rejected in all cases since analysis shows that capital employed doesnot significantly influence any of the indicators of financial performance. Hypothesis H2c is accepted which means greater human capital component will lead to greater ROE and Net Profit. H2d is partially accepted. Structural component significantly influences net profit but marginally influence ROE. Thus, it can be concluded that IC components can affect the profitability aspects of a company but cannot significantly influence the stock market elements of banking companies in India. Further study can be conducted with regard to other indicators of financial performance.

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