Intellectual Capital Performance and its Impact on Indian Commercial Banking Industry

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Abstract: The study proposes to examine and estimate the Value Added Intellectual Coefficient (VAIC™), to measure the impact of intellectual capital on the Indian banking sector. The impact of Human Capital (HC) and physical Capital (CA) of the Indian banking sector, on the bank's value-based performance (Bank's financial performance and its market value) was tested. The study confirms that there was progress in the overall performance of sample banks over the study period. This study reflects the biased growth of a few sections in the Indian banking segment. The study attempts to understand the implications of the business performance of the Indian banking sector from an intellectual resource perspective.

Key words: Intellectual capital, VAIC, human capital, physical capital Indian banks, financial performance and market value, perspective

INTRODUCTION

The intellectual capital has become as one of the essential segments of intangible assets which becomes a typical factor for organizational performance (Hsu and Fang, 2009). Besides, the intangible assets are a vital source of wealth creation and sustainable advantage for organization (Garcia-Ayuso, 2003). The studies of Stewart (1997), Sveiby (1997) and Edvinsson and Malone (1997) clearly indicated that the creation of economic value was largely based on intangible sources and capacities of organizations as these were the most powerful equipments to strengthen the organizational competitiveness. In simple terms, the intellectual capital is a key value driver for an organization because it concedes it a competitive edge. Hence, it is necessary to understand to what extent the intellectual capital is effectively employed by a particular sector in generating value for the organizations (Kamath, 2007). Besides, Tseng and Goo (2005) stressed the need to learn how intellectual capital created value in the organizations.

Similarly, the researchers like Ahangar (2011), Ahmad and Rashid (2011), Andriessen (2004) and Maditinos et al. (2011) emphasized the need to know how the intellectual capital was managed and measured

correctly. Hormiga et al. (2011), Hsu and Fang (2009), Kong and Prior (2008), Salleh and Selamat (2007), Wu et al. (2008) pointed out that there was no universally agreeable definition for the term, intellectual capital. Kamath (2007) and Rehman et al. (2012) measured the intellectual capital in the banking sector, employing VAIC (Value Added Intellectual Coefficient) and using secondary data. But few other researchers using primary data, measured intellectual capital in sectors such as microfinance, banking, etc. The intellectual capital is measured in respect of human capital, relational capital and structural capital. Researchers like Jaradate et al. (2012) and Sharabati et al. (2010) identified intellectual capital in different service sectors such as IT, pharmaceuticals and microfinance. Banking sector for its survival in the competitive market, generally exploits the intellectual capital through extensive use of human capital, structural capital and capital employed (Kamath, 2007). The roles and working of employees at different cadres and levels in the banking sector were directly linked to the knowledge and intellect of employees (Bontis et al. 2000). According to Bontis et al. (2000), it is the quality of people, organizational structure and relationship among employee which bestow banks the competitive edge

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in a skill-based economy. However, no exclusive and comprehensive study has been conducted to measure the intellectual capital in the banking sector in India. Being a knowledge-based and relationship-service industry, banking is an ideal industry to measure the intellectual capital.

Conceptual frame work

Intellectual Capital (IC): The intellectual capital has also been defined as the difference between a firm's market value and the cost of replacing its assets. The most widely used definition of intellectual capital is "knowledge that is of value to an organization". Intellectual capital encompasses knowledge assets 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 influence (Crabtree and Miller, 1999). Its main elements are human capital, structural capital and customer capital (Maji and Goswami, 2015).

Human Capital (HC): Human capital can be defined as health, knowledge, motivation and skills of employees. It is also referred to the employee competence in creating both tangible and intangible assets by contributing to the continuous generation of knowledge and ideas. Unlike structural capital, the human capital is always owned by the individuals who have it, unless it is recorded in a tangible form or is incorporated in the organization's procedures and structures.

Structural Capital (SC): The structural capital encompasses the enabling structures that allow the organization to exploit the intellectual capital. The structure ranges from tangible items offered by an organization such as patents, trademarks and databases to complete intangible aspects such as culture, transparency and trust among employees. This capital results from the products or services that firm have created over time and would remain with the enterprise when people leave (Bontis *et al.*, 2000).

Capital Employed (CE): Capital employed represents the value of the assets that contribute to a company's ability to generate revenue and it is also known as operating assets. This capital is normally financed by firms using two funding methods of shareholders 'equity and net debts.

Firm performance: Performance measurement tools could help the businesses to evaluate their resource allocation processes in order to determine how resources can be better managed and distributed through appropriate channels. Firm performance can be measured through different tools based on financial and non-financial aspects (Hsu and Fang, 2009). The financial performance of firm could be measured by using following ratios (Fig. 1).

Value of the firm: The value of the firm refers to intangible assets of the company. It is contributed by the components of the Intellectual Capital (IC), namely, Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE). A firm always looks to maximize its value by using many relevant factors, including intellectual capital. In order to calculate the value of the firm, the most common method, namely, Tobin's Q can be used (Berzkalne and Zelgalve, 2014).

Role of intellectual capital in creating value of banking industry: In recent years, financial institutions, particularly banking industry, have experienced a dynamic and competitive environment. Competition at a cross-border scale makes local banks to adjust their competitive position and ability to sustain their financial performance. The value created by banks depends far less on their physical assets than on their intangible assets. These assets, often described as intellectual capital are being recognized as the foundation of organizational competitiveness in the 21st century. The banking industry is one of the most knowledge-intensive and competitive industries. Hence, every bank needs to promote its value by using the intellectual capital.
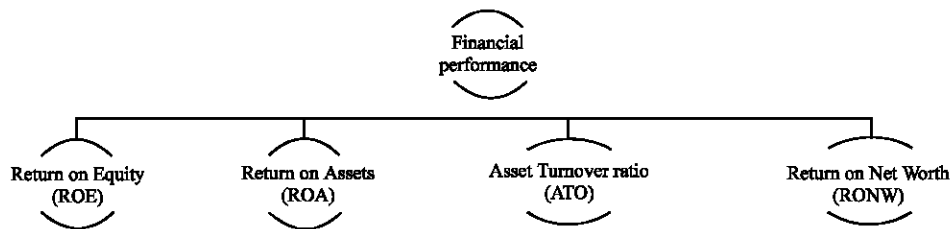

Fig. 1: Ratios used to measure financial performance of firm

Design of the study

Literature review: The select research articles, published in reputed professional and research journals in the area of firm performance and intellectual capital have been briefly reviewed in order to understand the research gap.

Puntillo (2009) investigated empirically the relationship between the value creation efficiency and firm's market value. The results did not show any strong association between the studied variables (except the relationship between components of VAIC and the CEE) and the different measures of the firm's performance. Afroze (2011) identified the influence of Intellectual Capital (IC) on the financial performance of 13 Private Commercial Banks (PCBs) in Bangladesh, listed with Dhaka Stock Exchange Limited. It was found that there was statistically significant correlation among the IC efficiency scores and financial performance indicators. Kamal *et al.* (2012) maintained that the intellectual capital was an important element of the theory explaining the firm performance. The study revealed the relationship between intellectual capitals and the performance of 18 commercial banks in Malaysia. Khanqah *et al.* (2012) studied the impact of intellectual capital on the market value and the financial performance of the sample firms. The efficiency of the value added by corporate intellectual ability (value added intellectual coefficient) was used to measure the intellectual capital construct. There was statistically significant relationship between Structure Capital Efficiency (SCE) and financial performance variables (ROE and ROA). Shakina and Barajas (2014) developed cost-effectiveness tools for the analysis of company's intellectual resources in terms of resource-based and value-based approaches. The study focused on the evaluation of intellectual capital to discover the drivers of company growth. It was found that the potential effectiveness of intellectual capital resources varied according to different institutional factors. According to Zehri *et al.* (2012), there was relationship between intellectual capital and business performance from the stand point of financial performance, the market place and economics. Berzkalne and Zelgalve (2014) reported that it was necessary to take into consideration the value which is off-balance-sheet. Large differences did exist between company market value and book value. The study investigated the impact of intellectual capital on the company value. The study found mixed results on the relationship between value added intellectual capital coefficient and company value. Sumedrea (2013) measured the intellectual capital and its influence on the economic performances, based on the VAIC Model. The results, obtained by applying certain regression models,

suggested that in crisis time, the development of companies was influenced by the human and structural capital while the profitability was additionally linked to the financial capital through the value added intellectual capital coefficient. Emadzadeh *et al.* (2013) investigated the effects of intellectual capital on performance indicators. To calculate the performance of the firms, balanced scorecard approach was used. It was found that intellectual capital did have positive and significant impact on financial performance, customers, business processes and learning and growth. Chatzkel (2003) examined the firm performance using Tobin's Q which is an important indicator. The management team in a firm is expected to be aware of using leverage because excessive debt usage leads to poor Tobin's Q. It was found that independent director and the holdings ratio of board of director definitely affected the firm performance. Ulum *et al.* (2008) estimated and analyzed the modified VAIC (M-VAIC) for measuring the value-based performance of the Indonesian banking sector. The results found that the ranking of three of the four sample banks were on the top performer's category. Andrew *et al.* used the Value Added Intellectual Capital coefficient (VAIC) in order to measure the performance. The results indicated that the sample commercial banks achieved performance, at an average level in all the years under study, except in 2011 when they achieved good performance. The study suggested that the commercial banks need to put more efforts to improve their intellectual capital efficiency. Venugopal and Subha (2012) used the analytical approach to measure the value of firms by using Ante Pulic's Value Added Intellectual Capital VAIC™ method. The impact of Intellectual Capital (IC) on the financial performance and market value of firms in India in respect of two major Indian industries, namely, banking and information technology industry was empirically investigated by Kamath (2015). The researcher used the VAIC methodology to evaluate the data and found that the financial performance and market value was indeed influenced by the IC of the firms. Singh and Narwal (2015) analyzed the association of intellectual capital components (human, structural and physical capital) with economic, financial and stock market performance in manufacturing, service and technology sector of India. It was also found that Structural Capital Efficiency (SCE) did not play any role in improving the economic, financial and stock market performance of the companies.

The above literature provides an overview of some empirical studies, already undertaken on the same lines of the present research. It was found that only few studies have focused on the impact of intellectual capital on the value of banks in India. Besides, there is no

comprehensive study, extensively covering performance and efficiency of intellectual capital and impact of intellectual capital on the value of banks in India. Therefore, the present study attempts to investigate the performance and efficiency of intellectual capital and the impact of intellectual capital on the value of banks in India.

Research question: This study was carried out to answer the research question how the Indian knowledge companies, particularly banks, create value from their intellectual capital?

Statement of the problem: Many research studies have found that the intangible assets of firms like, knowledge, information and information technology are prime resources in the knowledge economy. According to the Organization for Economic Cooperation and Development many companies do invest in employee training, research and development, developing customer relations, promoting computer and administrative systems, etc. The investments towards above activities are growing day by day and they are competing with physical and financial investments. Zeghal and Maaloul (2010) described that the changes in investment structures were made due to the rise of knowledge based economy. Edvinssion and Malone (1997), Sveiby (1997) and Archer *et al.* (1998) also considered the intellectual capital as the main source for the value creation of the firm in the knowledge economy.

To create value for the organization, intellectual capital need to be identified, measured and valued and development of intellectual capital should be incorporated in the strategy and goals of the company. However, it is difficult to measure intellectual capital, since, it is intangible and non-physical in nature. In the knowledge economy, companies are still following the traditional accounting model. The financial statement covers many of the physical and financial assets of the organizations but it ignores intangible assets. The growing gap between the market value and book value of the companies has motivated the researcher to this study. Hence, undertake the task of measuring the association between intellectual capital and financial performances was taken up as the major issue of this study. Against this background, this study was carried out to measure the performance, efficiency and impact of intellectual capital on the sample banks in India.

Objective of the study: The present study was carried out to analyze the impact of intellectual capital on financial performance and value of sample banks in India.

Hypothesis of the study: Based on the objectives of the study, the following null hypotheses were developed and tested in this study.

- **NH_1:**there is no association between intellectual capital and financial performance of sample banks in India

- **NH_2:**there is no impact of intellectual capital on the market value, financial performance and value of sample banks in India

MATERIALS AND METHODS

Sample selection: In order to analyze the impact of intellectual capital on the value of Indian commercial banks, the present study covered all banks in India. At the first stage, the study compresses all the 245 banks available in Prowess database as on 31st, December, 2017, but the required of required data were not available for138 banks. After discarding 138 banks for reasons of non-availability of data, the final selection of samples was restricted to only 107 banks in India. Therefore, the impact of intellectual capital on financial performance was studied only with the help of 107 sample banks.

Sources and collection of data: The study depended mainly on secondary data. The required data were collected from annual reports of sample banks, available at prowess database of Centre for Monitoring Indian Economy (CMIE), reputed journals, magazines and websites of sample banks.

Variables used for the analysis
Dependent variables
Measurement of the value of the firm
Tobins'Q: Tobin's Q or the Q ratio is the ratio that reflects the market value of a company's assets (as measured by the market value of its outstanding stock and debt) divided by the replacement cost of the company's assets (book value):

$$Tobin's\,Q = \frac{BV\ total\ assts\text{-}BV\ common\ equity\text{+}MV\ common\ equity}{BV\ total\ assts}$$

Measurement of the financial performance
Return on assets (%): The return on assets ratio, often called the return on total assets is a profitability ratio that measures the net income produced by total assets by comparing net income to the average total assets. In other words, the Return on Assets ratio or ROA measures how efficiently a bank can manage its assets to produce profits during a period:

$$ROA = \frac{\text{Net income}}{\text{Average total assets}}$$

Return on equity (%): Return on Equity (ROE) is the amount of net income earned as a percentage of shareholder's equity. It measures profitability of firm by revealing how much profit a bank generates with the money that the shareholders have invested:

$$ROE = \frac{\text{Net income}}{\text{Average stockholders equity}}$$

Asset turnover ratio (%): Asset turnover ratio is the ratio of the value of a bank's sales or revenues generated relative to the value of its assets. The asset turnover ratio can often be used as an indicator of the efficiency with which a bank is deploying its assets in generating revenue:

$$ATO = \frac{\text{Net sales}}{\text{Average total assets}}$$

Return on Net Worth (RONW): Return on Equity (ROE) is a measure of profitability that calculates how much value of profit a bank generates with each dollar of shareholder's equity:

$$RONW = \frac{\text{Net income}}{\text{Shareholder's equity}} *100$$

Independent variables
Measurement of the intellectual capital: The intellectual capital is measured by VAIC which is basically sum of these two components, i.e., Intellectual Capital Efficiency (ICE) and Capital Employed Efficiency (CEE). The intellectual capital efficiency is further broken down into two components as follows:

- Human Capital Efficiency (HCE)
- Structural Capital Efficiency (SCE)
- Capital Employed Efficiency (CEE)

Algorithm for computing the VAIC in the case of company value carries the following steps:

Algorithm VAIC:
Step 1: Calculation of Value Added Intellectual Coefficient (VAIC $_{it}$).

VAIC$_{it}$	=	Human capital coefficient (VAHC$_{it}$)+Structural capital coefficient (STVA$_{it}$)+Capital employed coefficient (VACA$_{it}$)

Where:

VAIC $_{it}$	=	Indicates corporate value creation efficiency on firm resources

Step 2: Calculation of Value Added Human Capital Coefficient (VAHC) Human Capital Efficiency (HCE) = Value Added (VA)/Human Capital (HC).

Where:

Hc$_{it}$	=	Investment in the Human Capital during the 't' period or total salary and wage including all incentives
VAHC$_{it}$	=	Value Added by one unit of Human Capital invested during the period of 't'

Step 3: Computation of the value added structural capital coefficient (STVA $_{it}$). Structural Capital Efficiency (SCE) = Structural Capital (SC)/Value Added (VA):

Where:

SC$_{it}$	=	Structural Capital (Value Added (Va$_{it}$), Human Capital (HC $_{it}$)
STVA	=	The proportion of total VA accounted by structural capital

Step 4: Calculation of Value Added Capital Employed Coefficient (VACA$_{it}$). Capital Employed Efficiency (CEE) = Value Added (VA), Capital Employed (CE)

Where:

Ca$_{it}$	=	Total assets-intangible assets at end of 't' period
VACA	=	The value created by one unit of capital employed during the 't' period

Step 5; Calculation of value added.

$$\text{Value added} = OP+W+D+A$$

Where:

OP	=	Operational Profit
W	=	Wages and salaries of employees
D	=	Depreciation
A	=	Amortization

Statistical tools used in the study: In addition to the above, the following statistical tools were also used:

- Value Added Intellectual Coefficient-VAIC (for computing intellectual capital)
- Descriptive statistics (for analyzing intellectual capital efficiency of sample banks)
- Pearson correlation analysis (for measuring association between intellectual capital and financial performance of sample banks)
- Multiple linear regression (for scaling the impact of intellectual capital on financial performance and value of sample banks)

RESULTS AND DISCUSSION

Impact of intellectual capital on the financial performance of sample Indian commercial banks: Table 1 presents the results of descriptive statistics for the sample variables, namely, Tobin's Q, VAIC, CEE, HCE, SCE, ROE, ROA and ATO, used in the study, during the study period from 01 January 2007 to 31 December 2017. It is to be noted that the values of mean, standard deviation and maximum were recorded as 0.033, 0.023 and

Table 1: The Results of descriptive statistics for Tobin's Q, CEE, HCE, SCE, ROE, ROA and ATO in respect of Indian commercial banks from 01 January 2007 to 31 December 2017

Variables	Mean	SD	Minimum	Maximum
Independent variables				
VAIC	0.182	0.600	-2.810	1.742
Components of VAIC				
CEE	5.058	2.981	0.402	12.740
HCE	0.288	0.173	0.001	0.793
SCE	0.033	0.023	0.000	0.121
Dependent variables				
Market value				
Tobin's Q	2.789	0.820	7.200	11.754
Financial performance				
ROE	0.193	0.550	-1.600	1.900
ROA	0.185	0.280	-0.201	1.880
ATO	0.163	0.060	0.102	0.273

Data extracted from http://prowessiq.cmie.com and computed using E-Views 7

Table 2: Results of correlation for Tobin's Q and VAIC, CEE, HCE, SCE in respect of sample Indian commercial banks from 01 January 2007 to 31 December 2017

Variable	Tobin's Q	VAIC	CEE	HCE	SCE
Tobin's Q	1.000				
VAIC	0.788*	1.000			
CEE	0.371	0.509*	1.000		
HCE	0.271*	0.699*	0.892*	1.000	
SCE	0.158	-0.082	0.666	-0.071	1.000

*Correlation significant; Data extracted from http://prowessiq.cmie.com and computed using E-Views 7

Table 3: Results of regression (Model-1) for VAIC on Tobin's Q in respect of sample Indian commercial banks from 01 January 2007 to 31 December 2017

Variables	Coefficient	t-statistic	Significant
Constant	-0.026147	-2.324566	0.1372
VAIC	0.028887	2.607841	0.0092***

Adjusted R^2 = 0.003816 F-value = 0.180323 (p-value>0.01 level; Data extracted from http://prowessiq.cmie.com and computed using E-Views 7

0.121, respectively, for Structural Capital Efficiency (SCE) during the study period. But the Value Added Intellectual Capital (VAIC) recorded the lowest (minimum) value of -2.81 in respect of sample commercial banks. The analysis of mean and minimum values clearly indicated that CEE achieved highest values of 5.058 and 7.20, respectively during the study period. Another variable, namely, Capital Employed Efficiency (CEE) recorded the highest value of standard deviation, with 2.981 and maximum with 12.74, during the study period. The lowest mean value of 64.14 [(2.789-1.000/2.789)*100)] (Hidden value) indicated the fact that 64% of market value, earned by sample commercial banks was ignored by its financial statement during the study period. The findings of this study confirmed the findings of Maditinos *et al.* (2011), Kathiravan *et al.* (2018a-c); Sigo *et al.* (2018a, b) and who found that the financial reports of the banking industry do not probably disclose their true market value.

It is observed from the results of correlation analysis, for sample variables in respect of sample commercial banks during the study period as given in Table 2 that there was strong and significant relationship between Tobin's Q and VAIC with a value of 0.788, between Tobin's Q and HCE with a value of 0.271 between VAIC and CEE with a value of 0.509 between VAIC and HCE with a value of 0.699 and HCE and CEE with the value of 0.892 in respect of sample commercial banks during the study period. Through this analysis, it was identified that value of Tobin's Q was strongly significant with VAIC and HCE in respect of sample commercial banks, during the study period. It is interesting to note that Structural Capital Efficiency (SCE) had no statistically significant

relationship with other variables, namely, Tobin's Q, VAIC, CEE and HCE during the study period. Therefore, on the basis of the analysis of VAIC and its components, this study reject the NH_1 "There is no association between intellectual capital and financial performance of sample banks in India," during the study period. In other words, there was association between IC and financial performance of sample commercial banks. Therefore, sample commercial banks should focus on the creation and promotion of intellectual capital continuously for their long term and sustained growth.

Table 3 exhibits the results (Model 1) for VAIC on Tobin's Q in respect of sample commercial banks, during the study period from 01 January 2007 to 31 December 2017. It was found that VAIC had created significant impact on the Tobin's Q with a value of 0.0092 during the study period. The overall analysis of Table 3 clearly shows that there was impact of intellectual capital on market value of sample commercial banks. As per the results, given in Table 3, the NH_2 "There is no impact of VAIC on Tobin's Q" is rejected. In other words, Model-1 clearly confirmed the fact that there was relationship between intellectual capital and financial performance of commercial banks. Hence, there is urgent need on the part of sample banks to promote quality of intellectual capital for their growth in the competitive environment.

The results of regression (Model 2) for the components of VAIC on Tobin's Q in respect of sample commercial banks during the study period from 01 January 2007 to 31 December 2017 are shown in Table 4. The analysis of individual components of VAIC on Tobin's Q, vividly shows that except one component, i.e., CEE, the other two components, namely, HCE and SCE with values

of 0.0512 and 0.0395, respectively, created significant impact on the Tobin's Q during the study period. In the light of the findings of this study, it is suggested that while investing their hard earned money in the share of banks, investors may also consider the quality of human capital of banks that it maintains. Besides, the investors need to put appropriate values on each component of VAIC for sample banks. In the other words, the commercial banks need to concentrate on the quality of intellectual capital more in line with changing environment and use of latest technology in providing banking services.

Table 5 shows the results of regression (Model 3), testing the influence of VAIC on the financial performance of sample commercial banks, during the study period from 01 January 2007 to 31 December 2017. It is to be noted that the overall influence by VAIC on the financial performance variables, namely, ROA, ROE and ATO was tested. The overall analysis of regression (Model 3) portrays that there was considerable relationship between VAIC and a variable of financial performance (ROE) with

a coefficient value of 0.001, during the study period. But the other two variables, namely, ROA and ATO did not earn the expected coefficient value during the study period. Therefore, the NH_2, namely "there is no impact of VAIC on financial performance of sample commercial banks during the study period" was partially accepted, since, coefficient or model solution was not statistically significant. This indicated that there was no significant impact of IC on sample commercial banks.

The results of regression (Model 4) for components of VAIC on the financial performance variables of sample commercial banks in India, from 01 January 2007 to 31 December 2017 are given in Table 6. It is clear that CEE was tremendously influenced by all the dependent variables like ROE ROA and ATO, with coefficient values of 0.167, -0.003 and -0.024, respectively. Besides, the variable, namely, HCE created a strong impact on all the variables of financial performance, except one variable, i.e., ROE. In other words, the other two variables, namely, ROA and ATO were significantly influenced by HCE with coefficient values of 0.175 and 0.139 during the study period. But SCE influenced ROA with a value of 0.020 during the study period. On the basis of the analysis of regression (Model 4), to reject the NH_2 "There is no impact of IC on the market value and financial performance and value of select sample commercial banks in India". The analysis of regression shows that IC did influence the market value and financial performance (particularly on ROA), of sample commercial banks.

Table 4: Results of regression (Model-2) for components of VAIC on Tobin's Q in respect of sample Indian commercial banks from 01 January 2007 to 31 December 2017

Variables	Coefficient	t-statistic	Significant
Independent variables	0.002	2.830	0.0407**
CEE	-1.239	1.180	0.7201
HCE	-0.006	3.170	0.0512**
SCE	-0.630	2.480	0.0395**

Adjusted R^2 = 0.81 F-value = 17.18 (p-value>0.05 level; Data extracted from http://prowessiq.cmie.com and computed E-Views 7

Table 5: Results of regression (Model-3) for VAIC on financial performance variables in respect of sample Indian commercial banks from 01 January 2007 to 31 December 2017

	Dependent variables					
	ROE		ROA		ATO	
Independent variables	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant	-0.001	2.960**	0.407	3.820**	1.029	0.420
VAIC	0.001	3.160**	-0.034	0.990	0.019	1.470
Adjusted R^2	0.970	-	0.790	-	0.880	-
F-value	46.770	-	16.150	-	25.270	-

Table 6: Results of regression (Model-4) for components of VAIC on financial performance variables in respect of sample Indian commercial banks from 01 January 2007 to 31 December 2017

	Dependent variables					
	ROE		ROA		ATO	
Independent variables	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant	0.167	3.430**	-0.003	3.820**	-0.024	0.190
CEE	0.001	4.440**	0.035	4.880**	-2.327	2.700**
HCE	-0.002	1.440	0.175	3.100**	0.139	3.870*
SCE	0.325	3.410	0.020	3.150**	-1.884	1.370
Adjusted R^2	0.900	-	0.950	-	0.780	-
F-value	12.740	-	24.230	-	18.760	-

*Significant 0.01 level, ** Significant 0.05 level; Data extracted from http://prowessiq.cmie.com and computed using E-Views 7

Findings of the study: The measurement of dependent variables (Tobin's Q, ROE, ROA and ATO) was influenced by independent variables (VAIC, HCE, SCE and CEE) that could change the financial performance of commercial banks and generate value for their business.

The analysis of components of IC, namely, HCE, SCE and CEE, indicated that the Indian commercial banks were mostly dependent upon the CEE, i.e., the funds utilized for the value creation of intellectual capital. It is evident that in the past, the banking sector in India focused only on physical assets rather than human capital. Besides, Indian banks did not use their human capital as efficiently as required, promote the value of the firm.

CONCLUSION

The correlation between intellectual capital, Tobin's Q and other variables of financial performance of sample commercial banks was studied by adopting the VAIC methodology as employed earlier in similar studies by Sri Ranga Vishnu, Kamath and Koswami who found that there was strong association between intellectual capital and financial performance of select firms. In the past, Indian commercial banks displayed a good performance of IC compared to other emerged and emerging economies. It was reported that the IC performance of Indian banks also was not satisfactory and this study proved that the intellectual capital performance of Indian commercial banks declined during the study period also. Hence, there is dire need for all Indian commercial banks to take appropriate steps against redundant and non-performing resources (employees). Besides, there is need to restructure and increase the efficiency of intellectual capital (Andriessen, 2004), particularly developed by Indian banks. The regression analysis (Model 1-4) indicates that VAIC clearly explained the financial performance and market value performance of commercial banks in India. It is suggested that appropriate changes in policies and adoption of innovative strategies in the HR policy by Indian commercial banks would enhance the efficiency of intellectual capital and in the process, the overall performance of commercial banks would be promoted in the long run.

The findings from this research may have valid implications for authorities such as regulators, shareholders managers and policy makers of commercial banks in India. The shareholders can also note and employ the relevant findings to add several feasible inputs to the components of VAIC. The dynamic utilization of human capital by banks leads to better performance and proper allocation of bank's investments in a proper way which must be a paramount consideration to the managers. The present study focused on the intellectual capital and financial performance of commercial banks of India without separating public and private sector banks. Only a few variables were taken for the study in measuring the performances in banking sector. This study expressed only the results of financial reports of sample banks and not the actual perception of employees. The limitations associated with statistical tools used, apply to this study also. The measurements of intellectual capital efficiency by using balanced scorecard and (VBM) could be carried out on periodical basis. The Structural Equation Model (SEM) technique may be used in order to letter learn the interrelationships between various components of intellectual capital and performance of banks. In compliance with International Accounting Standard Board (IASB), a new model can be developed to measure the accurate impact of intellectual capital on the performance of banks.

SUGGESTIONS

In the light of the findings of this study, the policy makers of banks need to recognize the importance of their IC, through periodic evaluation of their IC. Besides, the bankers need to identify appropriate intellectual capital variables to understand the functions of various IC variables. Thus, it is advised that Indian banks ought to take stern steps in identifying key staff (who have skills and abilities), working efficiently at banks and making them to deliver high HCE. Any steps, that would assist the banks to increase the performance of employees, including managers, would further promote the overall performance of the banks in the long run. Besides, effective use of IC measurement should be done, so as to help the commercial banks to reduce its NPA in long run too.

ACKNOWLEDGEMENT

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