DRIVERS OF VALUE CREATION IN
THE BANKING SECTOR OF INDIA

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ABSTRACT

The banking sector is at the threshold of great developments which are likely to materialize in the coming years. As such, financial institutions need to upgrade and update themselves in order to maintain their competitive advantage. The measurement of value creation efficiency of firms will help them, not only to measure and assess their drivers of value creation but also to understand which variables require more attention so as to generate long-term benefits. The present paper modifies the Value Added Intellectual Coefficient Model (VAICTM) developed by Ante Pulic (1998) to measure the impact of intellectual capital (and its sub-components i.e. Human Capital, Structural Capital and Capital Employed) and value creation efficiency on firm's profitability, productivity and market value. Three new components of Intellectual Capital i.e. Innovation Capital, Relational Capital and Social Capital are employed to assess value creation efficiency of 44 public and private sector banks of India. The required data are obtained from Prowess, a Centre for Monitoring Indian Economy (CMIE) database; and empirical analysis is done using linear regression to test the hypotheses.

The results indicate positive and significant relationships between the drivers of value creation and firm profitability, productivity and market valuation. Human Capital emerged as the most significant driver of value creation. The study will help both the academicians and practitioners in understanding the basis of value creation and intellectual capital in firms.

Keywords: Intellectual Capital, Value Creation Efficiency, Banking Sector.

INTRODUCTION:

In present times, the developing Indian economy is at the threshold of implementing several major scientific reforms and technological transformations, which once executed, may change the way India is perceived across the globe. The last few decades of the twentieth century have witnessed ripples of change in the way that business is being conducted in the nation's corporate sector. Not only India, an unseen revolution seems to have taken place, which has changed the mission and vision of all companies operating on an international platform as well.

Gone are the days when 'industrial capitalism' and 'dependence on tangible assets such as land, capital, plant and machinery' was the focus of all research. With increasing dependence on factors such as innovation, technology and intellectual capital, the advent of the 'knowledge-based economy' has changed the way managers strive to measure firm performance, profitability and productivity. Research has proved that 'intangibles or intangible assets', with the knowledge worker at the helm of affairs, have now started contributing immensely in the creation of meaningful value for all stakeholders of an enterprise. In germane literature, terms such as intellectual capital, intangible assets and invisible resources have been used synonymously by scholars (Vishnu, 2015; Mondal & Ghosh, 2012). These assets are now competing with tangible assets as predictors of firm performance. In 1962, Brookings Research Institute, a USA based consultancy firm, discovered that 62% of a company's value was represented by physical capital (as cited in Mondal, 2014). However, given the increase in 'R&D Investments, brand development and training', Low (2000) points out that 'the percentage of company's value that is unaccounted for by tangible assets has skyrocketed anywhere from 50% to as much as 90% of its value' (p.253). In such a scenario, studying the contribution of intangibles in value creation, will not only help managers in getting a complete view of their firms, but also assist them in devising strategies to improve their future performance.

Another proposition of traditional financial management – that value may be created only for the shareholders of a company – has been rejected by modern day economists. Value Creation, per se, is now a vast area of immense opportunities, which when given the right inputs, may reap benefits for all the stakeholders of a firm. Thus, value may be created (or destroyed) at all levels of a firm, and this creation (or destruction) of value may have a multi-dimensional impact on the employees, brand image, goodwill or any other aspect of business, for that matter.

However, despite being an oft-discussed and evolving area of study, not much has been done so far to understand the concepts of value creation and its drivers. There is little or no consensus on the definitions and typology of value creation, let alone, the drivers that impact it.

It is a widely accepted fact that 'value' is a relative term and 'value creation' has multiple dimensions in which it may be interpreted. Thus, the first motivation to perform this study was to define the concept of value creation, to discuss the variables that affect it and to break new ground in the area of measurement of intangibles as drivers of value creation in knowledge based companies of India with special focus of the banking sector.

Secondly, limited research has been done (in the Indian context) to discuss value creation efficiency of firms and even in that, there is an observed discrepancy about how the drivers of value creation impact firm productivity, profitability and market valuation. The study attempts to put forth conclusions that may answer these questions.

Thirdly, the study identifies Intellectual Capital (IC) as the primary driver or source of value creation in knowledge based firms of India, more so in the banking sector of the country. In order to measure, the impact of IC on value creation efficiency of firms, the study uses a modified version of the Value Added Intellectual Capital (VAICTM) Model, postulated by Ante Pulic in 1993 (Pulic, 2004). The impact of MVAIC is then studied on the firm productivity, profitability and market valuation, to assess whether or not the components create value in knowledge based companies of India.

The USP of the study lies in the fact that the MVAIC model not only measures the Relational Capital (as measured by expenditures on advertising, selling and marketing) and social capital or CSR expenditures (which are not captured by the classic VAICTM model) created by firms

but also uses new proxy variables to measure value creation efficiency of each sub component. Thus, the objective is to analyze which component of the MVAIC is a better predictor of the value creation efficiency in firms.

LITERATURE REVIEW:

In their book "Cracking the Value Code", Richard E.S. Boulton, Barry D. Likert, and Steve M. Samek (2000), have defined value creation as the "future value captured in the form of increased market capitalization". A report on "The concept of "value creation" in Integrated Reporting" by Ernst & Young (2013), defines value creation as follows -"Value is created through an organization's business model, which takes inputs from the capitals and transforms them through business activities and interactions to produce outputs and outcomes that, over the short, medium and long term, create or destroy value for the organization, its stakeholders, society and the environment". A number of tools, models and indices have been adopted over a period of time to measure value creation in knowledge based firms. The determinants of value creation in a business enterprise are so varied and great in number that it would very difficult to collate and classify them in quantifiable terms. However, in 1998, Ante Public proposed the Value Added Intellectual Coefficient Model (VAICTM) as a means to measure the value creation efficiency of a firm. According to him, the Intellectual Capital of a firm is the biggest contributor in the value created or value added by it. Thus, if it would somehow be possible to quantify the intellectual capital component of a firm, the resulting coefficients would actually be the amount of value the firm may have created over a certain period of time. The VAICTM Coefficient is measured by summing the Intellectual capital Efficiency (ICE) and Capital Employed Efficiency (CEE) of a firm.

VAICTM = ICE + CEE (1)

The Intellectual Capital Efficiency (ICE), in turn, is calculated by classifying Intellectual capital into its two major sub-components viz. a viz. Human Capital Efficiency (HCE) and Structural Capital Efficiency (SCE) of a firm.

ICE = HCE + SCE (2)

Where, HCE or Human Capital Efficiency Coefficient = VA/HC ; VA= Value Added; HC= Human Capital or total wages and salaries paid by the company and SCE or Structural Capital Efficiency = SC/ VA; where SC or Structural Capital =VA-HC i.e. Value Added-Human Capital

Incorporation Equation (2) in Equation (1), it may be concluded,

VAICTM = HCE + SCE + CEE (3)

Where, HCE or Human Capital Efficiency Coefficient = VA/HC ; VA= Value Added; HC= Human Capital or total wages and salaries paid by the company and SCE or Structural Capital Efficiency = SC/ VA; where SC or Structural Capital is the difference between Value Added and Human Capital employed in a firm.

METHODS:

Identification of Research Gaps & Research Problems:

Review of germane literature on drivers of value creation reveals several research lacunae that may be filled with further analysis. Research studies conducted in the past have revealed mixed results regarding the relationship of the drivers of value creation of firms and traditional measures of financial performance, while some have found a positive relationship between the two (e.g. Clarke et al.,2011; Gan & Saleh, 2008), still others provide negative or weak relationships (Firer & Williams, 2003; Zeghal & Maaloul,2010). Not only on an international level, studies conducted in the Indian corporate sector on VAICTM and value creation, provide inconclusive evidences of relationship between dependent and independent variables. Although VAICTM (in its original form) has been accepted as an efficient, holistic and complete measure for value creation, yet the increased attention on the role of intangibles such as corporate social responsibility and relational capital in superior firm performance warrants the need for a

modified VAICTM. Only a few studies of this kind have been conducted in the Indian context (Mondal, 2016; Vishnu, 2015; Vishnu & Kumar, 2014)

The Proposed Model – Modified VAICTM Model or MVAIC:
The research gaps identified through an analysis of existent literature point towards the need of an extended or modified VAICTM Model (henceforth referred to as MVAIC) to capture the essence of value creation in knowledge based firms in India.   Thus, the present study incorporates two more variables along with the original variables of VAICTM to measure the intellectual capital efficiency of firms. Primarily, the variables - Social Capital & Relational Capital have been added in the MVAIC. Another modification is done in the calculation of Structural Capital (which incorporates the R&D expenditures incurred by the firm to account for value created through innovation). Structural Capital has therefore been renamed to 'Innovation Capital" in M-VAIC.

1. Calculation of Modified Value Added (MoVA) following Kasarova et al (2010)-
   MoVA = EBITDA + MHC
   Where, EBITDA = Earnings before Interest Tax Depreciation & Amortization; MHC = Modified Human Capital (inclusive of Directors Remuneration)

2. Calculation of Modified Human Capital Efficiency Value Addition (HCEVA) - The calculation of Human Capital Efficiency in MVAIC is done on more or less similar lines as the original VAICTM model. As such, it includes all the expenses that an organization incurs on compensation given to employees, salaries, wages, bonus, ex gratia provident fund & gratuities paid and staff welfare & training expenses as Human Capital. In the modified measurement of HC (MHC), Director's Remuneration has also been added to the employee costs as it is believed that the top level management of the firms plays a crucial role in deciding how it creates value (Vishnu, 2015).
   HCEVA = MHC/MoVA
   MHC= Modified Human Capital i.e. Employee Costs + Director's Remuneration

3. Calculation of Modified Capital Employed Efficiency Value Addition (CEEVA)- Keeping Pulic's classic VAICTM model in view, the proposed CEEVA indicator is selected as a proxy to represent Physical & Financial capital of a firm. As such, Capital employed includes the book value of net assets of a firm.
   CEEVA = CE/MoVA
   CE = Capital Employed

4. Calculation of Innovation Capital Efficiency (ICEVA) (or Structural Capital Efficiency) - ICE or Innovation Capital Efficiency is obtained by summing the Research & Development (R&D) expenses of a firm (Jhunjhunwala, 2009; Liebowitz & Suen, 2000; Sydler et al.,2013; Vishnu & Gupta, 2014; Vishnu, 2015). This is done to accommodate organizational processes and innovation-related activities of a firm. According to Wyatt (2008), R& D Expenditures give rise to product and process innovations which ensures sustainable earning streams in future as well as value creation.
   ICEVA = (MoVA-MHC)/ MoVA
   MHC= Modified Human Capital

5. Calculation of Relational Capital Efficiency (ICEVA)-   The calculation of Relational Capital Efficiency is done by taking the value of relational capital into consideration. Relational Capital is defined as 'the ability of an organization to interact positively with business community members to motivate the potential for wealth creation by enhancing human and structural capital (Vishnu, 2015). Previous literature revealed that Advertising, Marketing, Selling & Distribution expenses were the main indicators of relational capital.
   RCEVA = RCE/ MoVA
   RCE = Relational Capital Efficiency i.e. Marketing, Selling & Advertising Expenses

6. Calculation of Social Capital Efficiency (SCEVA)- The social capital efficiency of a firm is measured through the expenditures that an organization incurs on fulfilling its Corporate

Social Responsibility or CSR. For years now, the Indian corporate sector has been focusing on developing a clean, socially acceptable image in the eyes of its stakeholders. 'Social capital' is the term that has been given to the driver that measures value creation through a company's CSR expenditure.

SCEVA = CSR Expenditures/MoVA

7. Calculation of Modified Value Added Intellectual Capital (MVAIC)

MVAIC = HCEVA+ CEEVA+ ICEVA+ RCEVA+ SCEVA

RESEARCH METHODOLOGY:

Data Source:

For empirical investigation of the proposed hypotheses, 44 firms of Banking Sector of India were taken into consideration. Not only is this sector knowledge-driven but it also gives due importance to the 'quality of human capital, R & D activities, product and process innovation and intellectual proprietorship' (Vishnu, 2015). Such features make this industry amply suitable for research on value creation.

The data used in this empirical study has been collected from the published annual reports of the companies which is available on Centre for Monitoring Indian Economy (CMIE) ProwessIQ Database. The companies have been shortlisted on the basis of the market capitalization, for the year 2016, and are listed on either the Bombay Stock Exchange (BSE) or National Stock Exchange (NSE). Companies with negative data values or missing values have been excluded from the sample. The present study covers a span of ten years i.e. 2007- 2016. Simple linear regression and correlation has been used to test the hypothesis.

DESCRIPTION OF VARIABLES:

Dependent Variables:

1. Return on Assets (ROA) – also known as Return on Total assets, is the ratio of operating income or net income to the average total assets. In other words,

   ROA = Net Income/ Average Total Assets

   This ratio has been used as a proxy to measure firm's profitability, because it helps in analyzing how efficiently a firm can leverage its assets to produce overall profits during a given period of time.

2. Asset Turnover (ATO) – The ratio of total sales to total assets (Peterson & Fabrozi, 1999) is termed as asset turnover ratio. It is used to indicate a firm's productivity and also, its ability to generate sales from its assets.

   In other words, ATO may be calculated as follows -

   ATO= Net Sales/Average Total Assets

   ATO is used as a proxy indicator of a firm's productivity.

3. Market to Book Value (MB) – This indicator is used to assess the market value of firms and its relationship with the book value. This ratio is especially used as an indicator of intellectual capital efficiency of a firm as it highlights the use of intangibles in value creation in knowledge-based companies. As such, Market to Book Value (MB) ratio may be calculated as follows–

   MB = Market Value/Book Value

   Where, Market Value = Price per share * Total no. of shares outstanding; Book Value = Equity which is a portion of company's balance sheet = Book value of common stocks.

Independent Variables:

As mentioned earlier, all the components of the Modified MVAIC are the independent variables chosen for this study i.e. HCEVA, ICEVA, RCEVA, SCEVA, CEEVA and MVAIC.

RESEARCH HYPOTHESES:

H1: Companies with greater Modified Value Added Intellectual Coefficient (MVAIC) tend to create more value, in terms of firm's profitability (Higher RoA)

H2: Companies with greater Modified Value Added Intellectual Coefficient (MVAIC) tend to create more value, in terms of firm's productivity (Higher ATO)

H3: Companies with greater Modified Value Added Intellectual Coefficient (MVAIC) tend to create more value, in terms of firm's market value (Higher MB)

RESULTS:

The present section discusses the results obtained from the empirical investigation of the data for 44 banks in India. The sample included both private and public sector banks.

Table 1, 2 and 3 present the results obtained for the regression models corresponding to the research hypothesis developed in the study. Table 1 presents the findings of the regression model which studied the impact of the drivers of value creation on firm profitability. The proxy measure chosen for firm profitability was Return on Assets. The findings indicate a positive relationship between Intellectual Capital Efficiency along with its sub-components and profitability performance of the Banking sector in India. Thus, H1 is accepted.

Table 1: Regression results on Value Creation Efficiency of Modified VAIC and its Sub-components with Return on Assets (ROA) of Banking Sector in India

Independent Variable	R2	F-Value	p-value	Coefficients	t-value	Significance
HCEVA	0.107	5.017	0.030	Constant	5.743	0.000
				HCEVA	2.240	0.030
RCEVA	0.061	2.731	0.106	Constant	11.520	0.000
				RCEVA	1.653	0.106
SCEVA	0.046	2.028	0.162	Constant	11.292	0.000
				SCEVA	-1.424	0.162
ICEVA	0.112	5.319	0.026	Constant	-1.832	0.074
				ICEVA	2.306	0.026
CEEVA	0.131	6.349	0.016	Constant	4.433	0.000
				CEEVA	2.520	0.016
MVAIC	0.124	5.958	0.019	Constant	4.096	0.000
				MVAIC	2.441	0.019

Note: Here *p<.05; n=44

Table 2 presents the results of the second set of hypothesis i.e. H2 which analyze the relationship between MVAIC and firm productivity, as measured by Asset Turnover Ratio (ATO). Human Capital Efficiency Value Addition (HCEVA) is found to be the most significant driver of value creation in terms of productivity as well, as depicted by an R-Square value of 0.25 or 25%. This finding indicates that in the past decade, banking sector has started to invest in its employees and realized their importance in achieving targets. Thus, H2 is accepted.

Table 2: Regression results on Value Creation Efficiency of Modified VAIC and its sub-components with Asset Turnover (ATO) of Banking Sector in India

Independent Variable	R2	F-Value	p-value	Coefficients	t-value	Significance
HCEVA	0.250	14.034	0.001*	Constant	35.047	0.000
				HCEVA	3.746	0.001*
RCEVA	0.070	3.157	0.083	Constant	55.061	0.000

Independent Variable	R2	F-Value	p-value	Coefficients	t-value	Significance
				RCEVA	1.777	0.083*
SCEVA	0.069	8.516	0.006*	Constant	50.909	0.000
				SCEVA	2.918	0.006*
CEEVA	0.115	5.472	0.024*	Constant	53.059	0.000
				CEEVA	2.339	0.024*
ICEVA	0.021	1.005	0.943	Constant	2.518	0.016
				ICEVA	-0.720	0.943
MVAIC	0.113	5.373	0.025*	Constant	51.047	0.000
				MVAIC	2.318	0.025*

Note: Here *p<.05; n=44

Table 3: Regression results on Value Creation Efficiency of Modified VAIC and its sub-components with Market to Book Value (MB) of Banking Sector in India

Independent Variable	R2	F-Value	p-value	Coefficients	t-value	Significance
HCEVA	0.352	22.816	0.000*	Constant	2.754	0.009
				HCEVA	4.777	0.000*
RCEVA	0.159	7.916	0.007*	Constant	8.184	0.000
				RCEVA	2.813	0.007*
SCEVA	0.069	3.132	0.084	Constant	7.178	0.000
				SCEVA	1.770	0.084*
CEEVA	0.139	6.777	0.013*	Constant	1.459	1.52
				CEEVA	2.603	0.013*
ICEVA	0.164	8.234	0.006*	Constant	3.141	0.003
				ICEVA	2.870	0.006*
MVAIC	0.154	7.662	0.008*	Constant	1.114	0.272
				MVAIC	2.768	0.008*

Note: Here *p<.05; n=44

Table 3 depicts the result of the third set of hypotheses i.e. H3 which analyze the relationship between MVAIC and Market Valuation of a firm, as measured by its Market to Book Value Ratio (MB). In this model too, Human Capital Efficiency Value Addition (HCEVA) has emerged as the most significant driver of value creation, as far as market performance of a firm is concerned. This indicates that the investors in banking sector do take the human capital aspect into cognizance while investing in banks. Thus, H3 is accepted.

DISCUSSION:

The findings revealed that almost all the components of the MVAIC Model (as measured by Human Capital, Capital Employed, Innovation Capital, Relational Capital & Social Capital) have significant and positive relationship with traditional measures of financial performance (namely, ROA, ATO & MB). The results were corroborated by several studies existing in germane literature (Mondal, 2016; Vishnu, 2015; Clarke et al.,2011; Gan & Saleh, 2008). Human Capital had a significant, positive influence on all three indicators of business performance of firms. These findings validate most of the human capital theories that state that 'organizations can improve their efficiency and performance by investing in people i.e. its employees' (Nyugen, 2016). The Relational Capital Efficiency Value Addition, as measured by the Selling, Advertising and Marketing expenses of a firm, positively and significantly affects both the firm profitability and market value. Sukhdev et al. (2016) remark that ever since the economic liberalization (1991) in India, the focus of the banking sector has shifted from a product-centric to customer-centric

approach. Increased competition between public and private sector banks has led to greater advertising and branding wars between banks, which has over a period of time, affected profitability, productivity and market valuation of banks. In the present study, SCEVA shows positive correlation with ROA and ATO of a firm. The Reserve bank of India (RBI) stressed on the need for banks to pay special attention to CSR reporting and disclosure. Despite this fact, most of the banks do not report their CSR expenditures in the given sample. In the Banking Sector, CEEVA is found to be positively and significantly related to profitability, productivity and market valuation of a firm. This result is consistent with the view that the traditional drivers of physical and financial capital in business environment still create value in the knowledge based sector of India. Innovation Capital Efficiency Value Addition (ICEVA) has emerged as major driver of value creation in the knowledge based sector of India, given that it shows positive and significant association with profitability and market valuation of banks. The findings of the present study suggest that the modified version of the classic VAICTM model is able to predict the variances in all three dependent variables chosen for the study. The newly introduced sub-components and the proxy measures of these sub-components may, therefore, be accepted as the drivers of value creation in knowledge based firms in the banking sector of the country.

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