The Relationship between Human Capital Efficiency and Financial Performance: An Empirical Investigation of Quoted Nigerian Banks

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Abstract

It has become a common phrase included in banks annual reports and accounts that; "Our employee are our greatest asset", yet there have not been adequate attention given to the value and contribution of this "great asset" on the overall performance of the banks. Two hypotheses Human capital efficiency has no significant impact on the EPS of Nigerian banks and Human capital efficiency has no significant impact on the ROE of Nigerian banks were tested. The study found that efficient utilisation of human capital does not have any significant impact on the return of equity of banks. Also the size of a bank has no significant impact on it return on equity, while the return on equity of banks cannot be predicted by human capital efficiency and size of the banks.

Keywords: Human capital, Human capital Efficiency, Earnings per share, Return on Equity, Value Added

1.1 Introduction

The main goal for any business is simple: Invest capital so that it maximises shareholder value. However, in modern times, this is a necessary but not enough condition because execution of successful strategies depends on access to intellectual and operational know-how, customer and supplier relationships, a committed workforce, and other such intangibles. At the heart of making these intangibles come alive is the firm's investment in human capital. As Carnegie (1919:3) puts it, "The only irreplaceable capital an organisation possesses is the knowledge and ability of its people. The productivity of that capital depends on how effectively people share their competence with those who can use it". It is logical therefore that competitive age in the 21st century has shifted from process and technology to quality of human capital.

Nigerian banks are reputed as one of the fastest growing sector in the financial service industry in the country. They have also earned themselves the reputation of the sector with the highest yearly recruitment in the industry if not in the economy at large and have a good compensation package for its employees. The sector has graduated from semi skilled labour driven, to a more professional and skilled workforce, where people who are highly educated and skilled are considered most appropriate for the sector. The new knowledge economies have highlighted the importance of human capital and the imperative need to measure and manage their associated costs and benefits. Banks and financial institutions, which are rich in human capital and face great 'human capital-walk outs' should be concerned with measurement of the cost of this unique asset. It has become a common phrase included in banks annual reports and accounts that; "Our employee are our greatest asset", yet there have not been adequate attention given to the value and contribution of this "great asset" on the overall performance of the banks.

When companies invest in physical capital; they try to select alternatives offering the highest return on their investment. They would also like to invest in human capital offering them the highest return. Traditional accounting methods, which are based on tangible assets and historical, transaction based information are inadequate for valuing intellectual capital of which human capital is one. It has become therefore imperative for firms to development methods of valuing their human capital and its impact on it performance, if it would continue to be relevant in the ever competitive knowledge-based economy.

2.1 Literature Review

Schmidt (2004) defines human capital as a form of intangible assets that creates future economic value, which include the competencies of front-line employees and the organisational capabilities.

Human capital is a broad concept encompassing many components but essentially describing the quality of the labour force. While some find the term human capital a limiting one, others such as Davenport (1999) suggest that identifying employees as human capital allows people to be more highly valued. Davenport proposes that this permits the model where employees are "investors in a business, paying in human capital and expecting a return on their investment".

Presently, there are three basic views for the notion of human capital. The first is the investing view, which conceives that human capital is the result of investment, and so the human capital value is the expenditure

that is invested to enhance personal physical strength and intelligence, and acquire knowledge and skills (Schultz 1961). The second is the view of part outputs, which conceives that human capital as proprietary knowledge, and skill, experience and the relevant workplace competencies of managers and technical innovators (Weijie & Zhao 2001). The third is the holistic output view, which conceives human capital as the total value of personal physical strength, intelligence, and knowledge and skills for utilisation. The total output is the sum of labour abilities of a particular population (Wang, Xu & Zhao 2005). There exist a strong belief and support for the third view, namely, that human capital is the labour ability of any person. Thus, human capital is not limited only to managers or technical personnel. More specifically, human capital is the 'output' formed by the investment, the form is intangible, and its value is not what has been invested, but the worth of 'output'.

Of the few studies that focus on accounting to human capital notables include Lev and Schwartz (1971), Flamholtz (1971), Morse (1973) and Friedman and Lev (1974). While each of these studies proposes a different valuation procedure for human capital, they all agree that the value of human capital should be reflected in the financial statements. These studies also argue that information on human capital could be useful to investors in assessing efficiency and predicting future profitability and productivity. This study however considers the basic problem by investigating whether expenditures on human capital can be viewed as assets. This study is on the premise of Flamholtz (1999:33), who states: "Thus the real issue is: Should investments in people be treated as assets?"

It has been argued over the years that investments in human capital cannot be capitalised because companies cannot force employees to provide services, consistent with the legal notion of free labour mobility. Yet labour mobility may be restricted due to various factors, such as geographical preferences, search and relocation costs, information asymmetry, age and gender. Hall (1982) reported that a typical US worker in the 1980s was in a job about eight years and a large fraction of the work force take on jobs that would last 20 years or more. This implies that while employees have the option to leave at any point in time, they do not exercise this option frequently. When compared to other fixed assets we can therefore say that human capital is expected to stay longer in an organisation than some fixed assets.

2.2 Valuation of Human Capital

Human capital valuation will not be complete without the mention of major researches formulated in this area. Notable among them are; Johansson and Nilson (1996) who developed the Human Resource Costing & Accounting (HRCA 2) which is aimed at calculating the hidden impact of HR related costs, human capital is measured by calculating the contribution of human assets held by the company divided by capitalised salary expenditures. Skandia Navigator developed by Edvinsson and Malone (1997) which was brought to fame by Skandia Insurance company which adopted it for measuring it intellectual capital, the model uses 91 intellectual and 73 traditional based metrics that covers; financial, customer, process, renewal and development and human. However, looking at human capital from the accounting view point one will be moved towards Monti-Belkaoui, et al (1995) suggestion that human resource valuation should be based on value-addition, as it is a measure of wealth. Value-addition is defined as the increase in wealth generated by the productive use of the firm's resources before its allocation among shareholders, bondholders, workers and the government. The models based on value-addition started becoming popular with the development of the Value Added Intellectual Coefficient (VAIC) of Pulic (1997), Value Added Intellectual Coefficients (VAIC™) is very important and consistent approach. VAIC™ is a component of Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) which is develop by Public in Austrian IC Research Centre. The model developed an equation that measures how much and how efficiently intellectual capital and capital employed create value, where the value of human capital is the sum of all salaries and allowances associated with the employees. Other models that have bought into this idea includes; Economic Value Added (EVA) by Stern & Sterwart (1997), The Value Explorer developed by Andriessen & Tiessen (2000) which was proposed by KPMG for calculating and allocating intangibles and Milost (2007) Dynamic Monetary Model where an analogy is made between employees and tangible assets; here the value of an employee is the sum the employee's purchase value and the value of investments in an employee, less the value of adjustment of an employee. With the popular use of value added statement by companies in many countries of the world including Nigeria, the statement amongst other things, shows how the benefits of the efforts of an enterprise are shared by employees, providers of capital, the government and reinvestment, be included in the external reporting. This can be seen as a clear indication of what an organisation expends on it human capital.

3.1 Research Hypothesis

In order to achieve the objective set by this research, the following hypothesis where developed;

Ho_1 : Human capital efficiency has no significant impact on the EPS of Nigerian banks

Ho_2: Human capital efficiency has no significant impact on the ROE of Nigerian banks

3.2 Methodology

The study is centred on human capital, hence the human capital components of VAIC^{TM} by Pulic (1997) Human Capital Efficiency developed to assess the efficiency achieved by the company from the investment in human capital. A total of 14 banks quoted on the Nigerian Stock Exchange were studied. A five year period was considered; therefore a 70 firm-year was studied.

VAIC^{TM} have been used in various study notable among them are; a study conducted on intellectual capital and performance of Austrian banks by (Pulic & Bornemann, 1999) and similar study conducted on Croatian banks by (Pulic, 2001). Mavridis (2004) used the same model to study the performance of Japanese banks. Other researches that have utilised VAIC^{TM} includes; Bharathi (2010) conducted study on the intellectual capital performance of Banking Sector in Pakistan using VAIC^{TM} and found that private sector banks out performs other banks on intellectual efficiency which he said is attributed to efficient usage and management of human capital. In another research conducted by Mohammed, N & Ismail, M (2009) using VAIC^{TM} to test the intellectual capital efficiency and firm's performance in Malaysian financial sectors, they found out that there is a significant and positive relationship between intellectual capital and company's performance. Ahangar (2010) analysed the role of Intellectual Capital in organisational performance by investigating Iranian companies using VAIC^{TM}.

3.3 Research Model

The following research models are formulated in line with our research hypothesis in order to empirically test the relationship between human capital efficiency and performance

ROE $= a + bHCE + bLogTA + e$ --(1)

EPS $= a + bHCE + bLogTA + e$ ---(2)

3.4 Variable Description

The dependent variable used in the study are the ROE and EPS, they are derived based on the following computation;

ROE = Return on Equity = $\dfrac{\text{Profit after tax}}{\text{Total equity}}$

EPS = Earnings per Share = $\dfrac{\text{Net Profit attributable to Shareholders}}{\text{No of Shares in Issue}}$

On the other hand the independent variable used is the Human Capital Efficiency as used in Pulic (1997) VAIC^{TM} which is obtained thus;

HCE = $\dfrac{\text{Value Added}}{\text{Human Capital}}$

VA = Value Added (calculated as Output less Input i.e. Total revenue less the difference between operating expenses and salaries)

HC = Human Capital (calculated as total salaries and allowances for the company)

Therefore;

VA = Total Revenue – (Operating Expenses – Salaries)

Control variable was also included in order to eliminate bias, the study controlled for the size of firm, which is believed to have a significant impact on the human capital as well as performance of the firm. In line with this the natural logarithm of total assets was adopted as the control variable for firm size (Xiaoyan 2008).

4.1 Results and Discussion

Insert Table I here

Generally, from the 70 observations as seen in Table 1, HCE has a minimum figure of -8.73 recorded by Wema bank. This means that the bank with the least efficient use of human capital is Wema Bank as recorded in the year 2008. The maximum HCE of 6.23 was recorded by Access Bank in the year 2008. The mean human capital efficiency is 2.5064, the standard deviation computed showed 1.97705. We can therefore infer that human capital efficiency of the banks can deviate from mean with 1.97705 from both upper and lower limit.

The table also revealed that the minimum ROE of the banks studied is -2.21 while the maximum is 1.77 and also recorded a mean ROE of approximately 7% and a standard deviation of approximately 44%. This mean that ROE of the banks understudy can only deviate from the mean from both limit by 44%.

Further computations from the table showed that the mean EPS for the banks understudy is approximately 86 kobo while the upper limit is 874 kobo and the lower is -526 kobo. The standard deviation showed 172.705, this mean a deviation of 172.705 is expected from the mean EPS of the bank from both sides.

Insert Table II here

From Table II above, there is a positive correlation between ROE and HCE controlled by size (LogTA) computed as 0.091, which is not significant. Coefficient of multiple determinations is 0.008 which means 0.8% of the variation in ROE is explained by HCE and size (LogTA). These means the regression equation appears not useful for predicting since the R Squared is very minimal. The p-value for ROE regressed with HCE and LogTA is 0.756 which is greater than 0.05, so the null hypothesis is accepted. This also means that at 95% confidence level there exist not enough evidence to conclude that HCE and Size (LogTA) of the company is useful for predicting ROE. Therefore model 1 thus is useless for prediction.

$$ROE = 0.511 - 0.012HCE - 0.073LogTA \text{ -------------- (1)}$$

However, looking at LogTA and ROE, p-value of 0.537, which means at 95% confidence level there exists no enough evidence to conclude that Size (LogTA) is useful for predicting ROE. Table I above also showed that at 95% confidence the slope of HCE is somewhere between -0.068 and 0.044, which means we are 95% confidence that for every single unit increase in HCE, the average ROE will decrease not more than -0.068 or increase not more than 0.044. While the slope of LogTA lies between -0.369 and 0.222 which means for every additional LogTA the average ROE will decrease not more than 0.369 or increase not more than 0.222. The VIF of the predictor variables of ROE and LogTA are both 1.062 which is less than 10, this means no variable in the model that is measuring the same relationship or quantity as is measured by another variable or group of variables.

On the other hand, there is a positive correlation between EPS and HCE controlled by size (LogTA) computed as 0.508, which is significant. Coefficient of multiple determinations is 0.258 which means about 26% of the variation in EPS is explained by HCE and size (LogTA). The p-value for EPS regressed with HCE and LogTA is 0.000 which is less that 0.05, so the null hypothesis is rejected. This also mean that at 95% confidence level there exist enough evidence to conclude that HCE and Size (LogTA) of the banks is useful for predicting EPS. Therefore model 2 thus is useful for predicting EPS.

$$EPS = -449.668 + 38.498HCE + 77.784LogTA \text{ ---------(2)}$$

Table II above also showed that at 95% confidence the slope of HCE is somewhere between 19.594 and 57.403, which means we are 95% confidence that for every single unit increase in HCE, the average EPS will increase between 19.594 and 57.403. The VIF of the predictor variables of HCE and LogTA are both 1.062 which is less than 10, this means no variable in the model that is measuring the same relationship or quantity as is measured by another variable or group of variables.

5.1 Conclusion

The study concluded that the banks have maintained consistency in its human capital efficiency coefficient, however, evidence of inefficient utilisation of human capital was experienced majorly in Wema Bank recording negative HCE for 3 years out of the 5 years study. Other banks like Sterling and Union Bank also experienced a year of inefficient human capital utilisation.

The study also concluded that efficient utilisation of human capital does not have any significant impact on the return of equity of banks. Also the size of a bank has no significant impact on it return on equity, while the return on equity of banks cannot be predicted by human capital efficiency and size of the banks.

However, the study conclude that the impact of human capital efficiency on the earnings per share of the banks exist although not significant, also conclude that size of the banks have very insignificant impact on the earnings per share. On the other hand evidence shows that efficient utilisation of human capital and the size of the bank have significant impact on the earnings per share of the banks.

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Appendix

Table I – Descriptive statistics

	HCE	ROE	EPS
Mean	2.5064	0.0660	86.3286
Median	2.62	0.10	59
Std. Dev.	1.97705	0.44100	172.705
Minimum	-8.73	-2.21	-526
Maximum	6.23	1.77	874
Valid N	70	70	70

Source: Computed from annual reports and accounts

Table II – Regression Results

Statistics	ROE			EPS		
	HCE	LogTA	HCE&LogTA	HCE	LogTA	HCE&LogTA
R	0.068	0.075	0.091	0.481	0.270	0.508
R2	0.005	0.006	0.008	0.232	0.073	0.258
B	-0.012	-0.073	0.511	38.498	77.784	-449.668
Sig.	0.574	0.537	0.756	0.000	0.025	0.000
Lower Bound	-0.068	-0.369	-1.135	19.594	-22.368	-1007.198
Upper Bound	0.044	0.222	2.157	57.403	177.937	107.862
VIF	1.062	1.062	-	1.062	1.062	-

Source: Result from SPSS 13.0

Banks covered in the study

ACCESS	HCE	ROE	EPS
2006	2.94	0.03	7
2007	5.35	0.21	87
2008	6.23	0.06	173
2009	4.69	0.11	141
2010	2.92	0.06	72
DBN			
2006	2.61	-0.01	-5
2007	2.86	0.13	89
2008	3.28	0.1	110
2009	4.71	0.06	48
2010	3.17	0.06	45
FIDELITY			
2006	2.33	0.12	19
2007	3.65	0.14	25
2008	4.37	0.1	45
2009	3.8	0.02	8
2010	2.08	0.04	20
FBN			
2006	2.45	0.21	269
2007	2.2	0.24	156
2008	2.35	0.09	223
2009	2.38	0.1	4
2010	2.31	0.08	98
FCMB			
2006	3.32	0.11	36
2007	2.72	0.19	61
2008	2.99	0.1	123
2009	2.92	0.03	21
2010	1.86	0.05	45
GTB			
2006	4.88	0.24	145
2007	3.66	0.27	163
2008	4.82	0.13	167
2009	3.05	0.15	128

2010	4.36	0.18	157
SKYE			
2006	2.19	0.12	33
2007	3.14	0.19	74
2008	3.59	0.16	172
2009	3.29	0.01	10
2010	2.82	0.09	80
STANBIC			
2006	6.17	0.09	34
2007	4.53	0.1	43
2008	2.38	0.12	49
2009	1.86	0.08	33
2010	2.12	0.1	42
STERLING			
2006	1.38	0.04	9
2007	1.38	0.02	6
2008	2.59	0.22	52
2009	-0.26	-0.3	-53
2010	2.1	0.16	33
UBN			
2006	2.14	0.1	160
2007	2.01	0.13	126
2008	2.56	0.22	214
2009	-1.04	-1.34	(526)
2010	2.5	-0.87	874
UBN			
2006	1.95	0.24	186
2007	3.04	0.35	241
2008	3.56	0.21	305
2009	2.69	0.07	60
2010	1.95	0.02	8
UNITY			
2006	2.22	0.04	315
2007	1.36	0.02	497
2008	0.11	-0.7	(83)
2009	0.64	-2.21	(99)
2010	2.12	0.28	37
WEMA			
2006	-0.94	-0.33	-66
2007	1.69	0.1	25
2008	-8.73	1.77	(455)
2009	-1.44	0.26	(116)
2010	2.64	1.09	154
ZENITH			
2006	3.13	0.11	191
2007	3.15	0.16	189
2008	2.82	0.14	345
2009	2.06	0.06	58
2010	2.72	0.1	106

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