

The Intellectual Capital and their Influence on the Financial Performance of Private Banks in the Province of Kurdistan

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Abstract— Using value-added intellectual coefficient (VAIC) methodology, the present study was carried out in order to investigate intellectual capital (IC) performance of private banks located in Erbil and examine the influence of IC on the financial performance of those banks. In so doing, IC components affecting the traditional indices of bank success were specified. The study focused on 1 private bank operating in Erbil in 2017, and the results indicated that they had a low IC performance which was figured out to be positively associated with bank financial performance indicators. Nevertheless, the relationships between the components and financial performance indicators changed as a result of breaking value-added intellectual coefficient into its components.

Keywords— Private Banks, VAIC methodology, intellectual capital.

I. INTRODUCTION

The traditional sources of competitive advantage that once utilized tangible assets to create firm value and maintain competitive advantage started to fade away with the development of knowledge-based economy (Pablos, 2002). It is recognized that in the new economic period, intellectual capital (IC) resources like customer relations and human capital are considered as the most important business success factors in maintaining competitive advantage and creating value of firms (Meditinos, Chatzoudes, Tsairidis, & Theriou 2011; Andriessen, 2004). Likewise, the efficient management of IC, but not tangible assets, causes the potential for creating competitive advantage and long-term value. This is an obvious characteristic of knowledge-based and financial industries such as banks in which the main resources have a non-tangible and intellectual nature (Shih, Chang, & Lin, 2010). As pointed out by Ahuja and Ahuja (2012), if IC is efficiently used, success in banking can be achieved. Delivery of services with high quality by banks is reliant on their investment in IC-related items like brand building, human resources, processes, and systems. It is also stated that although banks require physical capital as an essential

component to be able to operate, the quality of services provided to customers is determined by the intellectual capital (Goh, 2005). As a result, it is highly necessary that banks try to manage their IC efficiently.

In the present study, the value added intellectual coefficient (VAIC) developed by Pulic (1998) was utilized to assess IC performance of private banks located in Erbil. The effect of intellectual capital (IC) and its components on the banks' financial performance measures, i.e. return on assets (ROA) and return on equity (ROE), was also examined in the present study. Since the main resources of banks have an intellectual and intangible in nature, which play the most significant role in value creating process, efficiency of value creation and management of IC resources in the target banks were examined.

The present study was an attempt to provide private banks of Erbil with an easy method to figure out and assess their performance and promote IC management. Reviewing IC literature reveals the importance of IC efficiency role in the financial performance of banks; therefore, focusing on this issue in banks located in Erbil is of high significance.

II. BACKGROUND

Intellectual capital (IC) is defined by the Organization for Economic Co-operation and Development (OECD) (2000) as the “economic value of two categories of intangible assets of a firm: (1) organizational (structural) capital; and (2) human capital.” This definition is in line with the VAIC methodology that was utilized in the present study to assess IC performance. Based on this definition, IC can be classified into two components of human capital (HC) and structural capital (SC). Edvinsson and Malone (1997) also proposed a similar classification for IC. IC has also been classified into three elements of structural capital, human capital, and relational capital (Ting & Lean, 2009). Human capital refers to the employees’ knowledge, experiences, qualifications, and skills that they take with them when they quit the company (Zeghal & Maaloul, 2010). Structural capital is defined as the knowledge which maintains in the company after the employees leave it at night. This type of capital includes cultures and databases, customer relations and loyalty, firm brand and reputation, information technology, organizational routines, organizations’ management processes, procedures, systems, production processes, and supplier relation. (Zeghal & Maaloul, 2010).

No measurement of IC exists that is accepted worldwide (Chan, 2009). By reviewing the current IC measurement methods, Sveiby (2010) figured out 34 methods among which value-added intellectual coefficient (VAIC) methodology is regarded by many researchers as a widely-used method to assess IC performance. Several studies have utilized this methodology to study the relationship between corporate performance and IC performance in both developed and developing economies, which led to different results in banking and non-banking sectors (see Chan (2009) in Hong Kong, Chu, Chan, and Wu (2011) in Hong Kong, Firer and Williams (2003) in South Africa Komnencic & Pokrajcic (2012) in Serbia, Ku Ismail and Abdul Kareem (2011) in Bahrain, Kujansivu and Lonnqvist (2007) in Finland Maditinos et al. (2011) in Greece, Mehralian, Rajabzadeh, Sadeh, & Rasekh, (2012) in Iran, Ting and Lean (2009) in Malaysia, Wang (2011) in Taiwan, and Zeghal and Maaloul (2010) in the UK.

As defined by different sources, a firm is a set of tangible and intangible resources which can become the source of sustainable competitive advantage provided that they are rare, inimitable, valuable, and non-substitutable (Barney, 1991). According to resource-based theory, both human and structural intellectual capital and physical and financial capitals are regarded strategic resources because companies obtain competitive advantage and thus superior performance by acquiring, maintaining, and using these

strategic resources efficiently (Zeghal & Maaloul, 2010). As argued by Reed, Lubatkin, and Srinivasan (2006), competitive advantage and value added are only created as a result of IC because imitating and replacing competitive advantage and value added are difficult, while physical capital can easily be imitated, substituted, purchased, and sold. The same point is referred to by Youndt, Subramaniam, and Snell (2004).

According to the IC-based theory proposed by Reed et al. (2006) which regards IC as the firms’ only strategic asset playing an essential role in developing and retaining competitive advantage in firms, it is expected that IC and its elements to positively influence the organizational financial performance in the banks under study.

The study’s hypotheses

In order to achieve the goals of the present study, the following hypotheses were raised.

Hypothesis 1: Higher IC performance in the banks under investigation leads to higher organizational performance.

Hypothesis 2: Higher human capital efficiency in the banks under investigation leads to higher organizational performance.

Hypothesis 3: Higher structural capital efficiency in the banks under investigation leads to higher organizational performance.

Hypothesis 3: Higher capital employed efficiency in the banks under investigation leads to higher organizational performance.

III. RESEARCH METHODS

The sample of the present study included 10 private banks located in Erbil. The required data were obtained from the annual reports of the banks during 2015-2017. Value added intellectual coefficient (VAIC) method proposed by Pulic (1998) was utilized to assess the banks’ IC performance. This method was used by other studies like Abdulsalam et al. (2011); Al-Musali and Ku Ismail (2012); and Joshi, Cahill, and Sidhu (2010). VAIC is calculated using Equation 1:

$$VAIC = CEE + HCE + SCE \quad (\text{Eq. 1})$$

Where CEE stands for value added efficiency of the capital employed (CE) and CE for the book value of total tangible assets. CEE is the result of dividing the value added (VA) by CE. HCE stands for to efficiency of human capital in creating value, which is obtained by dividing VA by HC. HC represents personnel costs, SCE stands for value added efficiency of structural capital, obtained by dividing SC by VA, and SC for the difference between VA and HC. Total VA is calculated through Equation 2 below:

$$VA = OP + EC + D + A \quad (\text{Eq. 2})$$

Where OP stands for Operating Profits; EC for Total Employee Expenses; D for Depreciation, and A for Amortization.

Return on equity (ROE) and return on assets (ROA) are used to assess financial performance. ROE which is referred as returns on the shareholders' common stocks is regarded as a significant financial indicator by the stock owners. Return on equity (ROE) is measured as the annual net profit of an individual bank before tax is divided by average equity of shareholder. ROA which is an indication for effective utilization of available assets to create profits is calculated as the annual net profit of an individual bank before tax is divided by average total assets.

Bank size which was measured as the total assets was considered as a control variable in the regression model in order to be in agreement with previous studies such as Chan (2009) and Shiu (2006) and minimize its interference with the dependent variables. A dummy variable was also taken into account so as to control the global financial crisis (CRIS) which had a value of 1 in the period under study. The association between VAIC and the two financial performance measures (ROE and ROA) is examined in Models 1 and 2, while Models 3 and 4 substitute the aggregate IC measure with the three components of VAIC (see Table 2). All the linear regression assumptions were tested to make sure about the quality of the collected data and variable.

Table 1. Regression equations

Model	Regression equation
1	$ROE = \beta_i + \beta_1 VAIC + \beta_2 SIZE + \beta_3 CRISIS + e$
2	$ROA = \beta_i + \beta_1 VAIC + \beta_2 SIZE + \beta_3 CRISIS + e$
3	$ROE = \beta_i + \beta_1 HCE + \beta_2 SCE + \beta_3 CEE + \beta_4 SIZE + \beta_5 CRISIS + e$
4	$ROA = \beta_i + \beta_1 HCE + \beta_2 SCE + \beta_3 CEE + \beta_4 SIZE + \beta_5 CRISIS + e$

Findings

The banks' IC performance from 2015-2017 is indicated in Table 2. The overall mean IC performance of the Saudi banks is 3.646 which is lower than those found by Al-Musali and Ku Ismail (2011) for the Emirates banks (4.4), Abdul Salam et al. (2011) among Kuwaiti banks (4.45), El-Bannany (2008) for the British banks (10.80), Goh (2005) for banks in Malaysia (7.11) and Joshi et al. (2010) for Australian banks (3.80). Table 2 shows the trend of IC performance during the three years. Banks in Saudi Arabia experienced a decline in the value creation efficiency in 2009 reflecting probably the adverse impacts

of global financial crisis on banking sectors in this Gulf country. However, IC performance of banks rose in 2010, reflecting probably the success of Saudi government's policies to mitigate the negative impacts of the world financial crisis on the Saudi banking industry.

A comparison of VAIC components suggests that during 2008-2010, the banks in Saudi Arabia are generally more efficient in generating value from its HC rather than CE and SC.

Table 2. The banks' IC performance from 2015-2017

Year	Item	Coefficient
2015	HCE	2.985
	SCE	0.890
	CEE	0.046
	VAIC	3.978
2016	HCE	3.018
	SCE	0.452
	CEE	0.017
	VAIC	3.462
2017	HCE	2.843
	SCE	0.667
	CEE	0.037
	VAIC	3.897
2015-2017	HCE	2.948
	SCE	0.669
	CEE	0.033
	VAIC	3.779

The results of linear regression for Models 1 to 4 are presented in Table 3. As seen in that table, all of the regression models possess high statistical significance and high explanatory power. Compared with the results of employing VAIC as an aggregate measurement (see Models 1 and 2); however, the explanatory power of the models using the three VAIC elements (Models 3 and 4) was significantly higher, which indicates different emphases of the stakeholders and managers on the three elements of VAIC (Chen et al., 2005).

According to the results obtained for Models 1 and 2 presented in Table 3, it can be concluded that there is a significant positive correlation between VAIC and both ROE and ROA as the financial performance indicators of the private banks over the study period. The results related to Models 1 and 2 showed VAIC as a predictor of the private banks' intellectual efficiency. This result shows

that those banks that had greater IC performance had a better financial performance.

Table 3. Regression results

Independent variables	Model 1	Model 2	Model 3	Model 4
Intercept	-0.07***	-0.008**	-0.068**	-.011***
	(-3.487)	(-2.371)	(2.872)	(-3.575)
VAIC	0.826***	0.887***		
	(6.674)	(6.062)		
HCE			0.712***	0.464**
			(3.289)	(2.242)
SCE			0.026	0.142
			(0.098)	(0.874)
CEE			0.144	0.462***
			(1.498)	(4.795)
Size	0.103	-0.016	0.082	0.001
	(0.784)	(-0.086)	(0.432)	(0.012)
Crisis	0.088	0.064	0.086***	0.046
	(1.243)	(0.873)	(0.992)	(0.724)
Adjusted R ²	0.832	0.774	0.813	0.828
F value	58.328	38.672	28.749	34.034
Sig.	0.001	0.002	0.000	0.005
Notes: ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels respectively. The figures in the parentheses are the t-statistics.				

The results presented in Table 3 indicate that there is a significant positive relationship between HCE and both financial performance indicators in private banks located in Erbil, Iraq. It was also concluded that SCE has no significant relationship with financial performance indicators. CEE was found to have a significant positive relationship financial performance indicators. Moreover, physical and financial CEE led to more profitability in the banks than HCE or SCE, which is in line with the results reported by Firer and Williams (2003), Ku Ismail and Abdul Kareem (2011), and Mehralian et al. (2012). Furthermore, in terms of the control variables, the results showed that global financial crisis did not significantly affect the financial performance indicators of the private banks.

IV. CONCLUSION

The results of the present study showed that compared to their counterparts in developed and emerging economies, the private banks located in Erbil had a lower IC performance, which may be attributed to redundant and

nonperforming resources. Therefore, these banks need to develop a system to increase their efficiency in value creation. Analyzing HCE, SCE, and CEE shows that the main factor that determines the capability of private banks in Erbil to create value is HCE, which is mainly because the banking sector is a service sector in which customer services depend heavily on human capital. It can be stated that banks that utilize their HC more efficiently are more likely to survive. Therefore, private banks of Erbil are recommended to spot key people and teach them to deliver high HCE because a continuous training program is an essential tool for the employees and managers' performance. The results of the present study also indicated that there was a dire need for developing value creation efficiency of SC. Mehralian et al. (2012) pointed out that realizing and maintaining the value of technological knowledge (know-how) is the best strategy whereby developing countries can empower SC.

In general, as the results of regression analysis (Models 1 and 2) showed, financial organizational performance of private banks in Erbil can be explained through VAIC. On the other hand, based on the results of the regression

analysis of Models 3 and 4, it can be concluded that the private banks' managers failed to realize the full potential of human and structural capitals as the IC components in order to raise the stakeholders' benefit. The findings of the current study can be utilized by the managers of the private banks located in Erbil to adopt appropriate strategies and policies so as to obtain, utilize, develop, and retain intellectual capital. Policy makers in Erbil can utilize the findings of the present study in order to formulate and implement right policies in order to strengthen banking sector.

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