INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE OF SAUDI INSURANCE COMPANY

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ABSTRACT

This study adopts the value added intellectual coefficient (VAIC) to measure Intellectual Capital (IC) performance of insurance sector in Saudi Arabia for a period of three years from 2013 to 2015. This study further investigates whether IC performance and its components influence insurance industry financial performance measures, namely return on asset (ROA). Multiple regression models have been applied to examine the relationship between IC and financial performance of Saudi insurance companies using SPSS software. The results show that CEE has more significant influence on insurance companies' financial performance compared to other components of VAIC. Consequently, Saudi insurance companies should emphasize on utilizing their physical capital and financial capital in order to achieve higher financial performance. This study helps managers in insurance companies in realizing the aspects of IC that they should improve in order to enhance their financial performance. In addition, the outcomes of this study can provide insights to policy makers in Saudi Arabia to initiate more regulations that will lead to better utilization and management of insurance companies' IC.

Key Words: Insurance Industry,Intellectual Capital Disclosure, Intellectual Capital performance, Financial Performance, Saudi Arabia

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INTRODUCTION

In Saudi Arabia, there was a small amount of insurance activity in the 1950s because the practice of insurance was deemed illegal, being seen as involving a number of acts prohibited under sharia, including *riba* (interest), *gharar* (uncertainty) and *maisir* (gambling). It was not until the oil industry bloom in the 1970s that insurance industry began to show sustained growth. In 1977, the Kingdom's Council of Senior Ulema (a national body of religious scholars) declared that some forms of insurance are deemed to comply with sharia and are permitted in the country. This move opened the doors for local companies to offer insurance based on the takaful model and resulted in an influx of new insurance companies. However, a lack of industry regulation led to concerns about its sustainability and a corresponding lack of public confidence. In response to that, the government appointed the Saudi Arabian Monetary Agency (SAMA) to develop a suitable legal framework. SAMA first task was to formulate the Law on Supervision of Cooperative Insurance Companies in 2002 to establish a platform from which the industry could develop.By the end of 2003, the Law on Supervision of Cooperative Insurance Companies, promulgated by Royal Decree (M/32) dated 02/06/1424H, was enacted, followed shortly by its implementation in early 2004. The purpose of the Law and its Implementing Regulation is to regulate the insurance sector in Saudi Arabia.

In addition, in order to increase health insurance sector, in 2006, the authorities enacted the Health Insurance Law, which initially required all expatriates working in the Kingdom to have private insurance and in early 2011 was extended to cover all private employees.Furthermore,SAMA's introduction of the Insurance Intermediaries Regulation in October 2011 brought about many changes to what had been a loosely regulated area of the industry.According to a study by Saudi Hollandi Capital, Saudi Arabia insurance industry grew around 18% per annum from the year 2008 to 2012 and was the second largest market in GCC (Iqbal and Zarak, 2013). The regulatory intervention that followed intense price competition in 2013 has enabled Saudi Arabia's insurance market to return to a trajectory of sustainable growth over the course of 2014. Saudi Monetary Agency (SAMA) three new regulations that promote credibility in pricing and governance and enhance policy holders' right that is effective in September 2014 help the industry grow in the year 2015. According to astudy by Al Bilad Capital, Saudi insurance industry recorded an increase of 19% in 2015 and is one of the largest and fastest growing markets in GCC. In 2015, gross written premiums in Saudi Arabia is SAR

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35.6 billion (USD 9.5 billion) driven by the acceleration of the growth in vehicle insurance with its gross premiums surging 29% to SAR 10.3 billion (USD 2.7 billion), health insurance premiums posted SAR 18.9 billion (USD 5.04 billion), general insurance grew 3% posting SAR 5.4 billion and protection and savings insurance surged 12% to SAR 913 million (USD 243 million) (Fadaak& Al Ghamdi, 2016).

The number of insurance and reinsurance companies licensed in Saudi market reached 35 with 33 of the companies operating in at least one of the main insurance line namely general insurance, health insurance as well as protection and saving insurance. Health insurance is the largest contributor to insurance market in 2015 with market share of 53.32%, follow by general insurance market with 15.23%, vehicle insurance with 28.8% and saving and protection with 2.57% of the market share (Fadaak& Al Ghamdi, 2016). Factors such as strong economic growth, structural reforms, favorable demographic and regulatory environment has been vital for the industry's growth. Moreover, the growth of the real estate finance help contributes to the growth of property, casualty and responsibility insurance. However, the life insurance market remains weak due to religious belief, lack of awareness and presence of a large expatriate's population for whom life insurance is not a priority.

The rapid growth in the Saudi insurance industry has raised questions about the existence of relationship between Intellectual Capital (IC) and the financial performance. This is because there is not many IC related research that has been conducted in Saudi Arabia and none of the IC research focus on insurance companies. Insurance companies are a highly suitable setting to understand the features of the knowledge-based economy. This is because insurance companies intellectual and not its physical capital that is the most vital asset. Pablos (2002) stated that with the advent of knowledge based economy, the traditional bases sources of competitive advantage that depends on tangible assets in creating firm value and sustaining competitive advantage began to erode. In the new economy, IC resources such as human capital and customer relations have become the most important business success factor and the key factor in sustaining competitive advantage and creating value of firms (Shih, Chang & Lin, 2010). The insurance industry is characterized by a high degree of service innovation and provides markets with several services or products. As such, the efficient management of IC in insurance companies will become the main sources for creating competitive advantage and long term value.

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Therefore, it is vital for insurance company to manage their IC as efficiently as possible. Given the fact that insurance industry main resources are intellectual and intangible in nature and they play vital role in the process of creating value, it is of interest to explore the value creation efficiency and analyze how well IC resources are managed. As such, the purpose of this study is to examine the impact of intellectual capital (IC) and its components on the financial performance of insurance companies in Saudi Arabia. In particular, this study aims to adopt the value added intellectual coefficient (VAIC) to measure Intellectual Capital (IC) performance of insurance sector in Saudi Arabia for a period of three years from 2013 to 2015. This study further investigates whether IC performance and its components influence insurance industry financial performance measures, namely return on asset (ROA). As such,the specific objectives of this study are: (1) to investigate the association between IC and financial performance (ROA) of Saudi insurance companies and (2) to investigate the association between IC's components; human capital, structural capital and capital employed, and financial performance (ROA) of Saudi Insurance companies.

The remainder of the paper is set out as follows: Section 2 provides literature review and theoretical background, follow by details of data and methodology in the next section. Section 4 presents the empirical models and result analysis, and the last section provide conclusion and recommendation.

LITERATURE REVIEW

The shift toward knowledge based economies has changed the way of determining the firms' performance as it has been assured by many studies that firms' intellectual capital (IC) plays a dynamic role in creating the firms' value. Some studies focus on intellectual capital performances using efficiency coefficient called VAIC which was developed by Ante Pulic (Mavridis, 2004; Goh, 2005; Kamath, 2007; Yalama and Coskun, 2007; Al- Musali and Ku Ismail, 2014, Appuhami, 2007). Others focus on intellectual capital and business performance by examining the inter-relationship and interactions among intellectual components and business performance (Cabrita and Bontis, 2008; Iswati and Anshori). Overall, studies have proved that IC has a greater impact on the firms' performance than the impact of tangible assets.

Few studies focus specifically on insurance industry relationship between IC and financial performance using VAIC as the proxy to measure IC performance. Muhammad and Ismail

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(2009) investigated the efficiency of intellectual capital (IC) and its components (human capital, structural capital and capital employed) for the financial sectors particularly banking, insurance and brokerage companies in Malaysia for the year 2007. The study found that the overall intellectual capital had positive and significant relationship with profitability and ROA. However, Human Capital and Structural capital showed negative relationships with profitability and ROA while capital employed efficiencies showed positive and significant relationships with company's profitability and ROA.Alipour (2012) investigated the effect of intellectual capital (IC) on the performance of 39 insurance companies in Iran during the period from 2005-2007. This study measured IC performance of insurance companies using value added intellectual coefficient (VAIC™).The results obtained from partial least squares regression analysis revealed that there is a significant positive relationship between human capital efficiency (VAHU), employed capital efficiency (VACA), structural capital efficiency (STVA) and profitability (ROA). Moreover, the results indicated that there is a significant positive relationship between intellectual capital (VAIC™) and firm profitability.Sherif and Elsayed (2015) examined intellectual capital's (IC) effect on the performance of 29 Egyptian insurance companies listed between 2006 and 2011. IC is measured using value added intellectual coefficient (VAIC™) and its components (SCE, HCE and CEE) developed by Pulic (2000) while performance of the companies is measured through adopting variety of measures. Among the measure include return on assets (ROA), return on capital (ROC), Tobin's Q (TQ), return on equity (ROE), revenue growth opportunities (GO), and employee productivity (EP). Overall, the findings of this study revealed that there is a direct association between IC and the performance of Egyptian insurance particularly with capital employed efficiency and to a lesser extent, human capital efficiency. Ben Anuonye (2016) evaluated the impact of Intellectual Capital in Nigerian insurance companies in relation to their Return on Assets. The sample for this evaluation consisted of 150 workers in the 3 strategic departments of human resources, accounts and marketing of the 18 insurance companies using the purposive sampling technique. Primary data results indicated that HC and RC had statistically insignificant effects on ROA of the firms whereas SC had a significant effect on ROA. Nevertheless, the secondary data results revealed that HC and RC had statistically significant effects on the return on assets while SC had statistically insignificant effect on return on assets. Based on the results, this study concluded that HC, SC and RC each had a statistical weak relationship with ROA of insurance companies in Nigeria. In Saudi Arabia,

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specifically, the research on IC is limited and focuses more on the banking industry (Razak et al, 2016, Al-Musali& Ismail, 2014, Al-Musali& Ku Ismail, 2016).

HYPOTHESIS AND MEASUREMENT

Value Added Intellectual Coefficient (VAIC) has been used by most of the studies that examined the relationship between IC and firms' financial performance such as; Iswati and Anshori (2007), Muhammad and Ismail (2009), Alipour (2012), and Sherif and Elsayed (2016). Chan (2009) states that this method is consistent with the viewpoint of shareholders, as well as the resource oriented perspective which uses added value approach. In addition, it is a standard basis measure as it can be used to compare firms and industries at the national level (Chan, 2009). Ante Pulic created VAIC in 1998 to measure IC efficiency and more specifically to determine how much of the value added to the firms has been contributed by IC components. VAIC is based on two main assumptions: (1) the creation of a company's added value is based on the use of physical and intellectual capital, and (2) the companies' added value is connected to its overall efficiency (Ståhle et al, 2011). VAIC is usually calculated on the basis of three main components of IC: (1) Human Capital (HC) which refers to employees' costs such as; staff expenses and training and development; (2) Structural Capital (SC) which is represented by the difference between the produced added value (VA) and human capital (HC) (SC= VA-HC). Value Added (VA) is the operating profit (P) and expenses namely employees cost (C), depreciation (D) and amortization (A) (VA= P + C + D + A); and (3) Capital Employed (CE) which refers to the financial capital (CE= total assets – intangible assets). VAIC is the sum of capital employed efficiency (CEE) to human capital efficiency (HCE), and structural capital efficiency (SCE). CEE is the produced value added divided by capital employed (CEE= VA/CE) and it reflects the firms added value from each monetary unit invested in financial or physical assets. HCE is the added value divided by human capital (HCE= VA/HC) and it reveals how much of the firms' value is contributed from investing in human resources. Whereas SCE describes how much value firms can create per monetary units invested in structural capital, and it is calculated through dividing structural capital by value added (SCE= SC/VA). Overall VAIC shows how much value the firms can create through each monetary unit invested in the firms' capital resources. VAIC and its components (HCE, CEE & SCE) are the independent variables for measuring IC performance.

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Return on Assets (ROA) is the dependent variable used to measure insurance companies' financial performance. ROA reflects insurance companies' abilities to generate profit from the use of their assets. ROA has been chosen as a dependent variable in this study because the components of VAIC models explain ROA the most. ROA is calculated by dividing insurance companies' net profit by average total assets. An increase in companies' ROA indicates that the companies are utilizing their assets efficiently and effectively and this will result in an enhancement of companies' profitability (Anuonye, 2016). Two control variables, namely firms' size and leverage, are used in this study in order to minimize the interaction with the dependent variables. Insurance companies' size has been included as control variable and it is measured as firms' total assets. Lehn (2004) and Coles (2008) have demonstrated that large firms often have impact on corporate performance (Sherif&Elsayed, 2016). This study also uses financial leverage, which is calculated through dividing total liabilities by total assets, to monitor the liabilities' impact on firms' performance (Lev and Sougiannis, 1996; Abidin, 2009).

Based on Pulic's statement that ''VAIC correlates with a company's economic performance more generally as measured by return on assets (ROA) or returns on investments (ROI)" (Ståhle et all, 2011), this study hypnotizes that IC to be positively associated with insurance companies' financial performance. Moreover, the findings of various studies have supported that VAIC individual components have significant effects on firms' financial performance (Appuhami, 2007; Chan, 2009; Muhammad & Ismail, 2009; Alipour, 2012). Based on that, it is hypothesized:

> H1; There is significant positive association between VAIC's components (HCE, CEE, and SCE) and insurance companies' ROA.

> H2; There is significant positive association between VAIC and insurance companies' ROA.

SAMPLE

In Saudi Arabia, there are 35 Insurance companies which are listed in Saudi Stock Exchange (Tadawul) as at January 2016, 28 of them are qualified by the Cooperative Health Insurance Council to provide medical insurance services, while other companies offer services in the other three types (general insurance, protection and savings) (Saudi Insurance Sector Report, 2014). However, out of 35 companies, the final sample consists of 17 companies (50%) that have

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complete three years English version annual reports. Companies without English annual report are excluded from the sample. The sample's data have been collected for the period starting from 2013 until 2015, and they are obtained from two sources: (1) companies' published statements on Tadawul's website and (2) balance sheets, income statements, and cash flow statements in companies' annual reports. The insurance sector is selected due to the following reasons: (1) This sector has shown a consistent growth over the last period (Insurance Market in Saudi Arabia, 2013), (2) it is one of the sectors that IC affects its performance and competitive position significantly; and (3) no published study has been done to the association between IC and insurance companies' performance in Saudi Arabia.

Multiple regression analysis is applied in this study to analyze the relationship between the independent variables (VAIC and its components) and the dependent variable (ROA). The following equations have been developed to test the foresaid hypothesis, and investigate the relationship between insurance companies' IC and financial performance:

Equation1 to test H1:

$$ROA = \alpha + \beta1 \, (CEE) + \beta2 \, (HCE) + \beta3 \, (SCE) + \beta4 \, (FNSIZE) + \beta5 (LEV) + \varepsilon$$

Equation 2 to test H2:

$$ROA = \alpha + \beta1 \, (VAIC) + \beta2 \, (FNSIZE) + \beta3 \, (LEV) + \varepsilon$$

RESULT ANALYSIS

Overall result of descriptive statistic shows that ROA shows an improvement from the year 2013 to 2015 with average from -0.0510 to 0.0022. CEE also shows an improvement with an average of 0.0389 to 0.0657. As for HCE, its average performance is consistent with ROA and CEE because it increases from 0.5425 in 2013 to 1.4318 in 2015. SCE represents fluctuations in its performance because its average improves from -0.2270 in 2013 to 3.5107 in 2014. However, this improvement does not last because its mean turns back to decline to 0.7259 in 2015. LEV has also slight fluctuations which can be observed from the slight increase in its mean from 0.7409 in 2013 to 0.7615 in 2014. This slight increment in LEV's mean is followed by a slight decline to 0.7116 in 2015. In term of FNSIZE, its average improves from 13.6755 in 2013 to 13.9851 in 2015. Finally, VAIC illustrates fluctuations in its performance because its mean

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increases from 0.3544 in 2013 to 4.9749 in 2014. Then, VAIC's mean in 2015 decreases to reach 2.2235.

To test the association between the dependent and independent variables, and to determine the reliability of the hypothesis, Pearson correlation is performed in this study. Overall, the results of Pearson's correlations for hypothesis one reveal that ROA is positively and significantly correlated with CEE and HCE, and it is negatively and significantly correlated with SCE. These results indicate that CEE and HCE improve as ROA improves and deteriorate as ROA deteriorates whereas SCE erodes as ROA improves and improves as ROA erodes. Also, this result indicates the efficient utilization of CEE and HCE in Saudi insurance sector. On the other hand, correlations for hypothesis two show that VAIC is positively but insignificantly correlated with ROA. This illustrates that changes in ROA result in consistent changes in VAIC as they are positively correlated.

The results for multiple regression where the dependent variable is ROA and the independent variables are VAIC and its components; CEE, HCE, and SCE. With regard to model 1 which test the first hypothesis, **table 3a1** indicates that the overall regression is significant as F-statistics range between 0.000 (2014 and 2015) and 0.006 (2013). Moreover, the overall adjusted R squared for the first model indicates that the model has high explanatory power as it increased consistently from 62% in 2013 to 88% in 2015. Based on that, it can be concluded that the other independent variables that are not identified in this model have lower power in explaining ROA, and this power decreased significantly from 38% in 2013 to 12% in 2015.

	2013	2014	2015
N	17	17	17
F statistics (significant)	6.259 (0.006)**	11.427 (0.000)**	24.783 (0.000)**
Adjusted R-squared	0.622	0.765	0.881

Table 3a1: Multiple regression (H1)

As for Model 2, **table 3b1** illustrates that F-statistics range between 2.697 (p= 0.089) in 2013 and 2.452 (p=0.110) in 2015. Based on that, it can be concluded that the overall regression is not

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significant (p>0.05). When compare to the adjusted r squared for the first model, the adjusted R squared for the second model has low power in explaining the dependent variable (ROA) because it fits between 24% in 2013 and 21% in 2015. The other independent variables that are not identified in the second model maintain a significantly higher explanatory power and this power presents an improvement from 76% in 2013 to 79% in 2015.

	2013	2014	2015
N	17	17	17
F statistics (significant)	2.697 (.089)	5.820 (.010)**	2.452 (.110)
Adjusted R-squared	0.241	0.475	0.214

Table 3b1: Multiple regressions (H2)

The regression results from **table 4a2** reveal that there is a positive and significant relationship between CEE and ROA which implies that CEE and ROA are moving in parallel directions, and CEE has a significant impact on the profitability on insurance companies in Saudi Arabia. HCE is positively associated with the profitability of insurance companies in Saudi Arabia, but this result is not significant. Thus, HCE's results failed to support the first hypothesis. SCE is negatively associated with Insurance companies' profitability, but this result is insignificant. In conclusion, the first hypothesis is rejected due to the insignificant results of HCE and SCE

ROA	2013			2014			2015		
	Beta	t	P>t (2-tail)	Beta	t	P>t (2-tail)	Beta	t	P>t (2-tail)
CEE	0.079	0.291	0.776	0.537	3.364	0.006**	0.612	5.371	0.000**
HCE	0.579	2.039	0.066	0.218	1.436	0.179	0.214	1.903	0.083
SCE	-0.009	-0.037	0.971	0.092	0.507	0.622	-0.122	-1.290	0.224
LEV	0.448	1.695	0.118	0.264	1.693	0.119	0.186	1.718	0.114
FNSIZE	0.428	2.353	0.038**	0.296	2.016	0.069	0.256	2.489	0.030**

Table 4a2: Multiple regressions (H1)

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Table 4b2 reveals the results of multiple regressions for the second hypothesis. However, this result is insignificant and based on it, the second hypothesis is rejected.

ROA	2013			2014			2015		
	Beta	t	P>t (2-tail)	Beta	T	P>t (2-tail)	Beta	t	P>t (2-tail)
LEV	0.308	0.837	0.418	0.215	0.926	0.371	0.538	2.104	0.055
FNSIZE	0.246	1.016	0.328	0.545	2.831	0.014**	0.092	0.357	0.727
VAIC	0.219	0.638	0.535	-0.221	-0.988	0.341	0.110	0.491	0.631

Table 4b2: Multiple regressions (H2)

CONCLUSION

The first hypothesis of this study tests the relationship between VAIC components (CEE, HCE, and SCE) and ROA. These results indicate that HCE and SCE are not contributing significantly to insurance sector's profitability unlike CEE which maintains a significant impact on the profitability of insurance sector in Saudi Arabia. These results imply that insurance sector in Saudi Arabia is focusing on the efficient utilization of financial capital to enhance the sector's financial performance. This result is inconsistent with Alipour (2012) who found that there is a significant positive association between CEE, HCE, SCE and ROA of insurance companies in Iran.

Regarding the relationship between IC and financial performance of Saudi insurance companies, the second hypothesis in this study examines this relationship through proposing that there significant and positive relationship between VAIC and ROA. The results for this hypothesis do not support this relationship as they reveal that the relationship between VAIC and ROA is fluctuating. Also, the results indicate that VAIC is not affecting insurance companies' ROA significantly and this can be contributed to the insignificant results of HCE and SCE. Therefore,

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the second hypothesis is rejected and it can be concluded that IC's influence on financial performance is not high to the extent that impact Saudi insurance companies profitability significantly. Also, the results imply that insurance sector in Saudi Arabia are not utilizing their IC efficiently. However, the control variables are positively associated with ROA which imply that ROA is performing in a direction parallel to LEV's and FNSIZE's directions. These results are not significant, so LEV and FNSIZE are not impacting insurance sector's profitability significantly.

Overall, this study contributes to existing literature on the relationship between IC and financial performance of insurance sector because there is no study examining the relationship between IC and financial performance of insurance companies in Saudi Arabia. Consequently, this study is the first to explore this issue. The researcher hopes that this study will contribute to the limited literature on the impact of IC on financial performance of Saudi insurance sector.The results of this study will assist managers in insurance companies in recognizing the aspects of IC that they should improve in order to enhance their financial performance. As well as, it will help the mangers in applying and improving the knowledge management in their companies.The findings of this study may serve as inputs for managers in Saudi insurance companies to build strategies that develop, obtain, and utilize IC. Also, Insurance companies' managers can benefit from this finding by using them to identify and develop the sources of their competitive advantages.The outcomes of this study can provide insights to policy makers who are interested with the financial performance of insurance companies in Saudi Arabia, so they can initiate more regulations that will lead to better utilization and management of IC.

The present study encounters several limitations that increase the need for further research, first is the difficulties in finding complete three years annual reports (English version), and due to this the final sample is limited to 17 insurance companies while the total number of listed insurance companies on Tadawul is 35.This study has limitation in the dependent variable used to measure the financial performance. ROA is used solely in this study as dependent variables. There are other variables that can be used as dependent variables such as; return on equity (ROE), return on capital (ROC), Tobin's Q (TQ), revenue growth opportunities (GO), and employee productivity (EP).This study focuses only on one sector that is the Saudi insurance sector, and therefore the results of this study cannot be generalized to other sectors in the economy.

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