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Effect of Intellectual Capital on Return on Assets of Insurance Firms in Nigeria

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Abstract

Intellectual capital represents the efforts of workers towards the growth of an organization. The inability of firms to measure and quantify intellectual capital has posed fundamental problems overtime in the value measurement of firms. The purpose of this study is to evaluate the effect of IC in the value creation of insurance firms in Nigeria using their ROA. Expost facto research design was adopted in the selection of data. Primary and secondary data were employed. The target population consisted of 150 workers in the 3 strategic departments of human resources, accounts and marketing of 18 insurance companies using the purposive sampling technique. 150 questionnaires were distributed and a response rate of 74

Index terms— intellectual capital, financial performance, insurance firms, value added.

1 Introduction

he return on assets (ROA) is a measurement of the earnings attributable to each naira of the asset owned in the organization during a given period. This ratio is usually used to measure the effective use of resources in the organization.

The return on assets (ROA) is calculated by dividing the net income of a company by its total assets. ROA is measured as net income or profit before interest and tax divided by the total assets of the company. Profit before tax is best suited for this measurement because taxes are not controllable by management and since firms' opportunities for availing tax incentives differ, it may be more prudent to use profit before tax to measure ROA (Pandey, 2010).

Although there are no fixed standards or benchmarks for ROA but the higher this ratio is the better it is for the company. A higher return on assets means that the company is using its assets efficiently and effectively. An increase in the ROA is an indication of improved profitability and improved performance of a company, (Flamholtz, 1999; **??**agel, Brown & Davison, 2009).

Return on capital employed (de Pablos, 2003 & Bontis, 2004;Pandey, 2010; **??**iresh, 2012) can also be referred to as Return on Assets (ROA).

2 II.

3 Review of Relevant Literature a) Conceptual framework of intellectual capital

Intellectual capital is one of the most important resources that can positively impact on a firm's profitability and efficiency. Flamholtz (1999) reiterates that the world economy has shifted from the industrial in which plant and equipment were the core assets to the post-industrial era in which intellectual capital is the core asset. While most firms in the industrial era by definition relied on manufacturing capabilities, companies in the post-industrial era now rely almost completely on knowledge and information for survival and profit.

The basis for the above argument is corroborated by de Pablos **??**2003) and Bontis (2004) who argue that a company will gain a competitive advantage if intellectual capital is effectively harnessed in the organisation. The drivers of this intellectual capital advantage (Pulic, 2004) may be found in all employees' as well as the organization's ability to create value under a market assessment. In other words, intellectual capital (Nielsen, Bukh, Mouritsen, Johansen & Gormsen, 2006) is represented by the company's stock, such as skilled employees, knowledge and management philosophy. The study and the measurement of intellectual capital on the profitability of insurance firms is a key challenge to managers towards the fulfilment of their stewardship obligation to investors who rely on the financial information of such firms in evaluating the performance of the sector in Nigeria. Most importantly, such a study is expected to help the industry to formulate and implement strategies that will help develop its intellectual capital and guide them to benchmark themselves in order to improve their value creation as argued by **??**oh (2005). For example, the inclusion of intellectual capital contributions in the financial reports of early organisations such as R.G. Barry Corporation and Skandia Insurance Corporation (Edvinsson & Malone, 1997) helped to pioneer and increase awareness in the concept of intellectual capital reporting. Intellectual capital can be categorised into:

4 i. Human Capital (HC)

This is the value of all the workers in the organization with all the attendant rewards attached to their utilization (Verguwen & Alem, 2005). These capabilities are peculiar to the workers (even though the organization invests in them) because they go away with them whenever they leave the organization (Roos & Roos, 1997).

Human capital is the generic term for the competences, skills, trainings and motivation of the employees. The human capital of the organisation comprises of all the qualities and professional skills the worker bring into the organisation. HC is owned by the worker and leaves along with him whenever he leaves the organisation. Human capital is the totality of all remunerations and rewards paid to the worker. Human capital (Namvar, Fathian, Gholamin, & Akhavan, 2011) is at the heart of intellectual capital measurement.

5 ii. Structural Capital (SC)

Structural capital is the supportive infrastructure that enables human capital to function in an organisation. Structural capital is owned by an organization and remains with it even when the worker leaves the organization. Structural capital consists of trademarks, patents, formulas, management style, company reputation, image, corporate culture, networking, mission, vision. It is the difference between non-thinking and thinking resources that use very different management methods such as culture, organizational processes, technology, absorptive capacity and information systems to achieve corporate goals (Namvar, Fathian, Gholamin, & Akhavan, 2011).

This form of capital is of strategic importance in the corporate planning and growth of any organization. Structural capital refers to all structures deployed by the workers to drive the business processes. Structural capital is owned by the enterprise and remains with it even when the worker leaves the company. This form of capital can be evaluated on how employees, organisational units and different hierarchy levels of workers exchange information and co-operate together on organisational projects. Corporate culture, which is enhanced by structural capital, comprises of all values and norms, knowledge transfer and the working manner which is peculiar to every business organisation. It also includes compliance to rules and the ability of the workers to handle failures corporately when they eventually occur. Structural capital is calculated as the difference between value added and human capital.

6 iii. Relational Capital

Relational capital is the inclination that the customers have over the goods and services of an organisation. It is the preference and loyalty that customers have over a company's brand over other products and services. Relational capital is the relationship which an organisation has with external groups and persons over time. This will include trade relationships with past, present and potential customers, suppliers, partners and the public at large. To maintain a high degree of relational capital, the organisation must exhibit a high sense of salesmanship and marketability with its sales team and open access to customers (Soumet, 2007).

7 b) Theoretical framework of intellectual capital

Over the years, a number of theories, models

8 c) Empirical framework

Despite the prominence given to the efforts of the workforce in the annual financial statements of companies in Nigeria, the measurement of intellectual capital in Nigeria is very shallow. It is true that human capital is acknowledged by the directors of companies, especially in the Chairman's Statement in the Annual Reports, yet such knowledge are not measured or articulated in the companies' financial reports. This means that the value of firms in Nigeria is underreported. Yuan (2001), whilst visualizing intellectual capital as an important component that reflects organizational capacity opined that intellectual capital is the potential ability of an organization and a carrier for knowledge application and skills innovation. This view was corroborated by **??**ang and Xu (2002)

who identified intellectual capital as a wealth-creating instrument. They argue that capabilities and all kinds of knowledge elements were actually cited from intellectual capital.

In a study on the impact of investment in human resource training and development on employee effectiveness in Nigerian banks, Yahaya (2006) reiterates that an often repeated statement made by directors and chairmen of corporate organisations in their annual reports is "our main asset is our workers".

Yet, this 'main asset' is neither measured nor included in the financial report of the enterprise.

Using expenditures on the employee (salaries, wages and training costs) as well as other intrinsic values, there is a strong indication that human efforts in the organisation can actually be measured. In private organisations, intellectual capital measurement may be difficult because data for its measurement might be scanty or non-existent. In such types of organisations, very few employers of labour acknowledge the value of their employees. They fail to appreciate the fact that even physical and financial capital (capital employed) can only be productive through human efforts and manipulations. Beyond the inability of firms to measure intellectual capital, the general trend has been for management to recommend the layoff of the workforce as a way of reorganizational modification during periods of low profitability. This step or action on the workforce through layoffs may be counter-productive.

Since the measurement of intellectual capital is the process of evaluating human efforts in an analytical form, Flamholtz (1999) argues that neither financial nor managerial accounting has responded to current changes as evidenced in post-industrial economies. He realises that the accounting paradigm and related measurement technology have not been reconceptualised to account for this economic transformation. He maintains that the continued use of measurement tools that are no longer well suited to the current era, have therefore resulted in anomalies (Flamholtz, 1999).

In May, 1995, Skandia Corporation, the top insurance and finance enterprise in Sweden, issued the world's first public Intellectual Capital Annual report. This marked a shift from the previous annual reports which were only compiled for reference purposes in companies' reports. The result of this report was the formation of the Skandia Intellectual Capital Navigator, which not only measured intellectual capital, but also provided a framework for classification and a standard for the measurement of intellectual capital.

Since organizations acquire intellectual capital to generate future revenues, it is therefore most appropriate that such human resources be considered when valuing a company by capitalizing instead of expensing such expenditures in the current period. The significance of this argument is that intellectual capital should be treated like the other assets. Since all assets are reported on the balance sheet, these also should be reported along with physical assets.

The Value Added Intellectual Coefficient, VAIC (Baldini, Liberatore & Ridi 2011) approach is used to determine a firm's efficiency in using intellectual capital resources. The sample analysis used by these scholars consisted of financial sector companies listed on the Italian Stock Exchange for the period 2006-2008. Their findings fully confirm the existence of a positive relationship between accounting values and market values on the one hand and Intellectual Capital (IC) components as measured by VAIC and market value on the other. Results show that investors attach more value relevance to Human Capital Efficiency (HCE) than to Structural Capital Efficiency (SCE) and that HCE plays an indirect role in the relationship between IC and market value.

VAIC, as measured by Ante Pulic (Pulic, 1998(Pulic, , 2000(Pulic, , 2004)) has been criticised as an invalid measure of intellectual capital. The argument was premised on the fact that VAIC indicates the efficiency of the company's labour and capital investments and has nothing to do with intellectual capital. The criticism was on the use of the measurement variables as being overlapping and the results obtained from the calculations not supporting the hypothesis which states that VAIC correlates with a company's stock market value.

According to Singh (2009) human resource costs can be categorized into Capital and Revenue Expenditure. He stated that Capital expenditure would include acquisition, development, retention, update, hiring, recruitment and training costs. Whereas Revenue expenditure would include wages, salaries, bonus, commission, perquisites, allowances, short-term motivation, efficiency and maintenance costs. He concludes that the value of human resources can be calculated either on the basis of Cost of Production approach or the Capitalized Earnings Approach. He affirmed that capital expenditures are written off over the expected life of the employees, while revenue expenditures are written off or charged into the company's Profit & Loss account of the current year. Rowbottom (1998) in his thesis on intangible asset accounting and accounting policy selection in the football industry in the United Kingdom corroborates this view thus, that intellectual expenditure can be segregated into capital and revenue forms. This segregation may not be clear-cut principally because of the problem of demarcation between the various costs.

In the insurance industry, intellectual capital measurement has not been widely adopted. Moslehi, Mohaghar, Badie & Lucas (2006) in their investigation of the intellectual capital measurement and management in the Iranian insurance industry concluded that in spite of the importance of intellectual capital measurement, the insurance industry in Iran largely ignores them. They concluded that the IC toolbox does not disclose the value of the firm's intellectual resources. However, Iswati & Anshori (2007) found that intellectual capital, though new in Indonesia, has influence on the insurance companies' performance in the Jarkata Stock Exchange.

In Nigeria, studies on the measurement of intellectual capital in insurance firms are currently not available. Onafalujo, Eke & Akinlabi (2011) observe though that accounting in insurance companies, using the new IFRS recommendations is relevant to the Nigerian financial environment but argue that the application of IFRS through

the use of observable and unobservable market inputs as well as the experience variance of operators may be difficult in the short run but achievable in the long run. They identified that the inability of the workforce to uphold good ethical practices in insurance firms in Nigeria do negatively affect the practice of insurance. Though such unethical practices may work in the immediate and short run to reduce the number of claims payable, such practices will no doubt undermine the confidence of current and prospective clients and this would inevitably bring about adverse effects on the reputation and performance of the industry in the medium and long run. In a study on organisational knowledge management as a strategy for Nigerian insurance companies, Epetimehin & Ekundayo (2011) observe that intellectual capital, a vital corporate asset, will melt away unless companies do something to stop the brain drain and to retain critical knowledge. They opined that the survival of insurance companies in Nigeria is dependent upon the resolve of the workforce to eliminate unethical practices which are resorted to in avoiding liability under insurance policies. This assertion was collaborated by Alaka, Tijani & Abass (2011) when they identified the impact of strategic planning on the performance of the Nigerian insurance industry.

Furthermore, Appuhami (2007) concludes from his empirical study of the impact of intellectual capital on Thailand's financial sector that there is a significant positive relationship between investors' capital gain on shares and corporate intellectual capital.

Ong, Yeoh & Teh (2011) investigate the intellectual capital efficiency in 43 food and beverage companies listed on the Malaysian Stock Exchange between 2008 and 2010. Using the VAIC (HCE, SCE, CEE), the outcome of their study revealed that the beverage companies have greater VAIC and intellectual capital efficiency (ICE) when compared to food companies over the 3 years period.

In another study which evaluated the role of intellectual capital in the university efficiency system at Azad Islamic University in Iran; using synthetic model of genetic algorithm and decision trees, Modaresi, Rezaei & Javid (2012) observe that the development of intellectual capital affects university efficiency significantly.

Yahaya (2006) using the quantitative measure published by the Institute of Intellectual Capital Research and approved by the Saratoga Institute measured the impact of investment in human training and development on employees' effectiveness in Nigerian banks between 2001 and 2005. Her study confirmed that an assessment of the human resource effectiveness of 3 commercial banks (Zenith, First and Union bank) showed that Zenith bank with the best human resource management and accounting practice performed better than First Bank and Union bank. Tongo (2010) in his article on accounting for intellectual capital sets out to highlight the embedment of intellectual capital accounting within the confines of strategic management. He recommends that just as in traditional accounting where independent auditors are assigned to verify the accuracy of financial reports; independent strategic managers who are external to the firm should be employed to cross-check and perhaps correct whatever information that is being reported by the intellectual capital accountants, that is, strategic managers of individual companies. He concludes that this process would help to authenticate or disapprove the contents of intellectual capital reports which are actually meant to facilitate the long term decisions that business stakeholders may be making. investigates the relationship between intellectual capital and value creation criteria of 59 companies listed in Tehran Stock Exchange for a period of five years. The results indicate that there are significant relationships between the independent variables of intellectual capital and dependent variables of economic value added, cash value added, market value added, and refined economic value added.

Rahman (2012) gives a guide on the assessment of the value added impact of intellectual capital components, which are primarily human and structural capital, on measures of productivity, profitability and market value of a firm by employing the Value Added Intellectual Coefficient (VAIC) technique. Reviewing the intellectual capital components, he suggests measures that are of importance for improving a firm's efficiency and resources in the United Kingdom.

In a study of the effect of intellectual capital on organizational competitive advantage in Jordanian commercial banks in the Irbid district, Bataineh & Zoabi (2011) found that there were strong significant and positive influences between human and structural capital on competitive advantage, and moderate significant and positive influences with relational capital. These studies indicate that intellectual capital measurement and its effects on strategic business management are assuming a fundamental position in the contemporary business environment globally.

Henry (2013), in a qualitative investigation of intellectual capital in the engineering industry (with respect to SMEs) in the UK within the context of a recession, conducts ten interviews on the companies chosen. He concludes that there is a greater need to address the practical implications and barriers to the implementation of intellectual capital management through the Innovative Potential, Collaborative Potential and Operating Efficiency sectors in the industry.

To understand how the measurement of intellectual capital can favour intellectual capital mobilization, (Chiucchi, 2013) examines the role of those who design and implement intellectual capital practices. Using the Kolb's experiential learning theory model, she opines that actors must complete an experiential learning cycle so as to enable them appreciate fully the contribution of intellectual capital in their organisations. The experiential learning theory model is an alternative way of understanding how intellectual capital measurement produces effects and how such effects can contribute to the mobilisation of intellectual capital in the industry. In addition, Corcoles (2013) analyses the importance of intellectual capital management as instruments to face the new challenges in European universities by providing assistance in the process of developing their ability to identify, measure and manage their intangible assets. The study concludes that a basis for the understanding

of how European universities measure and manage their intellectual capital can now be assessed through the definition and diffusion of the organisation's strategic objectives by identifying the critical intangibles related to these objectives and the causal network of relationship among them.

Demartini and Paoloni (2013) analyse the transition from measurement to management in relation to intellectual capital with particular reference to operational activities, strategies and context. The study highlights the process leading to the implementation of intellectual capital framework in the electronic and defence industries and concludes that such a framework will impact positively and create value in the organisation.

9 d) Empirical Framework of Performance

Financial performance in relation to intellectual capital connotes notable actions or achievements which accrue to an enterprise as a result of intellectual capital measurement and application.

In an empirical study of intellectual capital performance and its impact on the financial performance of Pakistani insurance companies, Rehman, Ilyas & Rehman (2011) found that human capital efficiency (HCE) plays a significant role in IC performance of both life and non-life insurance sectors of Pakistan. They concluded that an insurance company with a high HCE and SCE invariably will have a better financial performance.

Using a sample of 32 audited financial statements of quoted companies in Nigeria, Uadiale & Uwuigbe (2011) examine the impact of intellectual capital components on business performance measured with Return on Equity (ROE) and Return on Assets (ROA). Their results show that intellectual capital has a positive and significant relationship with the performance of business organizations in Nigeria.

Salman & Mahamad (2012) review some of the available measurement tools that can be applied to evaluate the knowledge-based assets using management model and market model in the Malaysian economy. They found and agreed that the motive behind the development of intellectual capital measurement is to allow managers to evaluate their investments in intellectual capital assets as well as their contribution to the company's performance. They discovered that most organizations have only a vague understanding of how much they have invested in intellectual capital let alone what they receive from those investments.

Using the VAIC model, Javornik, Tekavcic & Marc (2012) studied more than 12,000 Slovenian companies between 1995 and 2008 and found a high degree of correspondence between the improvement in the rank of a company's IC investment efficiency and the improvement in rank of its financial performance in the peer group.

Clarke, Seng & Whiting (2010) using Pulic's VAIC examine the effect of intellectual capital on firms' performance in Australian listed companies between 2004 and 2008. The results suggest that there is a direct relationship between IC and the performance of Australian publicly listed firms, particularly with capital employed efficiency and to a lesser extent, human capital efficiency. They further found a positive relationship between human and structural capital components in the prior and current years' performance of the firms. Their findings also suggest the possibility of a moderating relationship between IC components and physical and financial capital which impact on a firm's performance.

Using the Sveiby's Intangible Assets Monitor, Cuganesan, Carlin & Finch (2007) examine the reporting of human capital performance in the Australian banking sector. Their findings suggest that there is diversity in human capital reporting levels; the co-existence of intellectual capital and corporate social responsibility and stakeholder concerns in reporting on human capital as well as variations in the value creation-focus of organisations when reporting their performance in managing intellectual capital.

Using the Balanced Score Card (BSC) strategy, **??**ose & Keith (2007), examine the development of a framework for the measurement of an organisation's performance. Measuring performance in relation to a major Australian company, they studied how the newly appointed CEO of the Fosters' Brewing Group reversed a decline in performance by adopting, among other initiatives, the balanced scorecard approach to management and turned the organisation's fortunes around.

Using 14 banks as sample size, Zou & Huan (2011) carried out a study on the impact of intellectual capital on the performance of listed banks in China. They opined that capital employed efficiency (CEE) and structural capital efficiency (SCE) have a negative correlation with the technical efficiency (TE) using the Data Envelopment Analysis (DEA), while human capital efficiency (HCE) has a positive correlation with TE.

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Effect of Intellectual Capital on Return on Assets of Insurance Firms in Nigeria However, they conclude that the correlations between capital employed efficiency (CEE) and TE, human capital efficiency (HCE) and TE are not statistically significant.

Kamath, (2007) suggests a positive relationship between intellectual capital and performance. In a study of 98 Indian banks, the result of his study showed that foreign banks out-performed the local banks because they made the best use of their intellectual capital in their operations.

Also, El-Bannany (2008) in his investigation of the determinants of intellectual capital performance in UK banks over the period 1999-2005, asserts that the standard variables of bank profitability and bank risk is important in the determination of banks' performance. The results also show that investment in information technology (IT) systems, bank efficiency, barriers to entry and efficiency of investment in intellectual capital variables, which have not been considered in previous studies, have a significant impact on intellectual capital performance.

According to the result of a study conducted by Kujansivu (2006) on 20,000 Finnish companies between 2001 and 2003 using VAIC, companies in the electricity, gas and water supply sector were most efficient in utilising their intellectual capital. The study provides an empirical evidence of the implementation of intellectual capital management tools for the enhancement of performance in Finnish companies. The VAIC method used in the study was based on the premise that value creation is derived from physical and intellectual capital. Rafiei, Ghaffari & Parsapur (2012) investigate the role of intellectual capital in the improvement of the performance and social and technological economy of Iranian hospitals and concluded that there are some correlations between intellectual capital components and performance. In the empirical study of Mohammad & Ismail (2009) on the efficiency of intellectual capital (human capital, structural capital and capital employed) in the performance of 18 listed financial companies in Malaysia also assert that the banking sector relied more on intellectual capital followed by insurance companies and brokerage firms. The findings of the study are consistent with that of Goh (2005), who examines the intellectual capital performance of commercial banks in Malaysia for the period 2001 to 2003.

Rehman, Rehman & Zahid (2011) examine intellectual capital and its impact on corporate performance in 12 modaraba companies in Pakistan using the VAIC components of human capital, capital employed and structural capital. The empirical result showed that one of the most important components of intellectual capital performance is Human Capital Efficiency which helps to boost financial performance of firms. However, in a study of the relationship between intellectual capital and innovation capital with financial performance and value of companies in the Tehran Stock Exchange (Besharati, Kamali, Mazhari & Mahdavi, 2012) found that there is no significant relationship between intellectual capital and corporate value. But they observed that there seemed to be a significant relationship between intellectual capital and financial performance. Concluding, they remarked that there was a significant but negative relationship between innovation capital and financial performance in the listed companies.

In a related study of the effect of performance on listed Jordanian insurance companies, Almajali, Alamro & El-Soub (2012) found out that leverage, liquidity, size and management competence indices have a positive statistical effect on the financial performance of those insurance companies and suggested the need to have highly qualified employees in the top managerial staff. Confirming the positive relationship between intellectual capital and firm performance, Wang (2011) in his study of Taiwanese firms in 2001, using customer capital, human resource capital and structural capital as independent variables over return on asset, market price to book value and total productivity found that the relationship between structural capital and firm performance was insignificant. But the paper concludes that the firms achieve positive performance when they emphasise on human training, customer related management and research and development. Abdulai, Kwon & Moon (2012) investigate factors instrumental to the success of software industries in India, Ireland and Israel in relation to the performance of software firms in West Africa. Focusing on the influence of top management commitment and transformational leadership on intellectual capital and its relationship with firms' performance, they proposed a second level model on the software industry. To validate this model, they conducted a field survey involving 83 software firms in the West African region. The result of their investigation showed a significant relationship between the elements of intellectual capital and competitive capabilities of firms and between competitive capabilities and firm performance. Their study showed among other factors, that the intellectual capital of these nations is said to have contributed significantly to their success in the software industry. From their study, there is therefore a general consensus that management of intellectual capital constitutes the most important source of competitive advantage for organizations.

In a study to explore the relationships between intellectual capital and business performance in Iraqi industries, Ahmad & Mushraf (2011) investigate whether intellectual capital has a direct effect on business performance. They affirm that intellectual capital is becoming the pre-eminent resource for creating economic wealth. Tangible assets such as property, plants, and equipment continue to be important factors in the production of goods and services though Volkov & Garanina (2007) examine the importance of Intangible Assets in knowledge-based economy. They confirm the statement that the workforce is the main asset of a company and more so in knowledge-based companies. In their study of 43 Russian companies between 2001 to 2005 using econometric models, their surveys showed that the value of companies is now mostly generated by intangible assets. Brymer, Molloy & Gilbert (2014) highlight input, output and process contingencies as a pipeline hiring mechanism adopted by firms in the engagement of human capital in the modern economy. Pipelines, according to the authors, refer to repeated inter organizational hiring system and practice which firms use to differentially acquire and accumulate intellectual capital and mitigate intellectual capital risks particularly in the knowledge-based firms.

13 III.

14 Methodology

Ex-post facto research design was adopted in the selection of data modes. Primary and secondary data were employed. A targeted sample size of 150 workers was used. The target population 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. 150 questionnaires were distributed to respondents and a response rate of 74% was recorded. Face validity, content validity and pilot tests were used to validate the instruments. The Cronbach's Alpha reliability test gave a result of (r=0.806) and (r=0.800). Regression was used for data analyses at 5% levels of significance.

15 b) Research Question

How can Intellectual Capital measurement contribute positively to the Return on Assets performance of insurance firms? c) Research Hypothesis H 0 : There is no significant relationship between intellectual capital and the Return on Assets (ROA) of insurance firms.

16 d) Test of Hypothesis

A test of hypothesis was carried out in line with the research objective for the purpose of finding the relationship between intellectual capital and return on assets. The regression coefficient was given as: Y = a+? 1 x 1 +? 2 x 2 +? 3 x 3 +µ. Where, Y = Return on Assets a = constant ? 1 = coefficient of human capital ? 2 = coefficient of structural capital ? 3 = coefficient of relational capital µ = error level incorporating omitted variables .513 Adj. R 2 .409 F-stat.

17 P value (F-stat)

.015

Significant at ? = 0.05 Source: Researcher's regression output (2014)

From table 4.1, the probability values were given as: P(x 1 =0.014<0.05); P(x 2 =0.495>0.05) and P(x 3 =0.021>0.05) respectively. The results show that structural capital had statistically insignificant impact on return on assets of the insurance companies under review whereas human capital and relational capital had statistically significant impacts on the return on assets of the companies under review. The above result is in line with a priori expectation that intellectual capital will positively affect the financial performance of insurance firms.

From of the result displayed above, the probabilities connected with model x 2 is higher than the specified level of significance, that is, P(x 2 =0.495>0.05). Therefore null hypothesis is accepted for model x 2 which represents structural capital while null hypothesis for models x 1 , P(x 1 =0.014<0.05) and x 3 , P(x 3 =0.021<0.05) with lower P values than the stipulated level is rejected. The combined effect of the independent variables on ROA was however significant at (F=.015<0.05). This implies that Research question is answered and its objective has been achieved. The R 2 (.513) which is a measure of good-fit shows the rate of change in the Return on Assets which was accounted for by insurance firms' ability to effectively apply human, structural and relational capital in their operations. This result indicates that a change in the firms' application of intellectual capital accounted for only 51.3% of the change in the return on assets by the insurance companies under review. The slope coefficients of the B values of 0.008, 0.009 and 0.010 respectively from Table 4.1 for human capital, structural capital and relational capital when substituted for the original equation models of ?, ? 1 , ? 2 and ? 3 will give the following equations: Y = -.139+0.008 (human capital) + 0.009 (structural capital) + 0.010 (relational capital) + µ. The result of table 4.1 also show that relational capital had a statistically significant impact at P=021<0.05. This result shows that relational capital has the capacity to increase the financial performance of firms. Soumet (2007) affirms that a firm must exhibit a high sense of salesmanship and marketability with its sales team so as to positively impact on the financial performance of a firm. This same view was also confirmed through the works of Bataineh & Zoabi (2011).

V.

18 Effect of Intellectual Capital on Return on Assets

Primary data result indicated that human capital and relational capital had statistically insignificant effects on return on assets of the firms whereas structural capital had a significant effect on ROA. The null hypothesis was therefore accepted in respect of human capital and relational capital. The same null hypothesis was rejected in respect of structural capital because the effect was statistically significant on return on assets. Aggregate effect of HC, SC and RC was significant at (F=.000<.05). The hypothesis was rejected on this model. This position was in line with a study carried out by Soumet (2007); Namvar, Fathian, Gholamin, & Akhavan (2011). Their conclusion was that structural capital as a management method had the capacity to achieve corporate goals or positive financial performance

In another study on the effect of intellectual capital on organizational competitive advantage in Jordanian commercial banks in the Irbid district of Jordan carried out by Bataineh & Zoabi (2011) they further confirmed

that there was a strong significant and positive influence between structural capital and the competitive advantage of the organisations.

The secondary data analysis had a reverse effect on the relationship between the dependent and independent variables. Whereas human capital and relational capital had statistically significant effects on the return on assets, structural capital had statistically insignificant effect on return on assets. The null hypothesis was therefore rejected in respect of human capital and relational capital, and accepted in respect of structural capital. The f-statistic was significant at (F=.015<.05) as a result of the combined effect of the independent variables. The hypothesis was also rejected in this respect.

This result showed that relational capital had the capacity to increase the financial performance of firms. Soumet (2007); Bataineh & Zoabi (2011) affirm that firms must exhibit a high sense of salesmanship and marketability with its sales team so as to positively impact on the financial performance of a firm. [1] [2] [3]

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Figure 1: Global 2016 C

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1 : Hypothesis

Figure 2: Table 4 .

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[3] Costing & Accounting, 4 (1),11-25.

Appendix Key: 1=Strongly Disagree, 2=Disagree, 3=Fairly Disagree, 4=Fairly Agree, 5=Agree, 6=Strongly Agree 1 Benefits arising from the assets of the firm can be associated with the ability of the workers to come up with profitable investment plans in their organisations.

Return on Assets (ROA) 2 Management need not border about returns as long as adequate tangible assets have been invested in the company. 3

Prudent financial management by managers brings about high financial performance. 4 A company's financial growth may not necessarily be reflected in the fixed asset growth. 5

The financial intelligence of workers in an organisation does not contribute to a high return on assets.

[Modara Sector Of Pakistan] , Modara Sector Of Pakistan . *Australian Journal of Business and Management Research* 1 (5) p. .

[Pandey ()] , I M Pandey . http://www.flipkart.com/financial-management-10th/p/itmdytktxhkmh4dc *Financial Management* 2010. (10) . (th edition)

[Almajali et al. ()] 'A Comparison of financial performance in the banking sector: Some evidence from Omani commercial banks'. A Y Almajali , S A Alamro , Y Z Soub . *M. Tarawneh. International Research Journal of Finance and Economics* 2012. 3 p. .

[El-Bannany ()] 'A study of determinants of intellectual capital performance in banks: The UK case'. M El-Bannany . *Journal of Intellectual Capital* 2008. 9 (3) p. .

[Zou ()] 'A study of the intellectual capital's impact on listed banks' performance in China'. X Zou , HuanT . *African Journal of Business Management* 2011. 5 (12) p. .

[Tongo ()] 'Accounting for intellectual capital: A 21 st century responsibility for strategic Managers'. C I Tongo . *Journal of Management Systems* 2010. 22 (1) p. .

[Besharati et al. ()] 'An investigation of relationship between intellectual capital and innovation capital with financial performance and value of companies accepted in Tehran Stock Exchange'. E Besharati , R H Mazhari , S Mahdavi . *Journal of Basic and Applied Scientific Research* 2012. 2 (2) p. .

[Verguwen ()] 'Annual report of IC disclosures in the Netherlands, France and Germany'. P G Verguwen , Alem , FJ . *Journal of Intellectual Capital* 2005. 6 (1) p. .

[Bose and Thomas ()] 'Applying the balanced scorecard for better performance of intellectual capital'. S Bose , K Thomas . *Journal of Intellectual Capital* 2007. 8 (4) p. .

[Baldini et al. ()] 'Brand transaction announcements and stock price volatility'. M A Baldini , G Liberator , T Ridi . *Journal of Intellectual Capital* 2011. 12 (3) . (Retrieved from www.emeraldpublishing)

[Yuan ()] *Corporate intellectual capital management*, Q H Yuan . 2001. Beijing. Economic and Management Publishing House.

[Flamholtz ()] 'Current issues, recent advancements and future directions in human resource accounting'. E G Flamholtz . *Journal of Human Resource* 1999.

[Namvar et al. ()] 'Exploring the role of human capital on firm's structural capital in Iranian ebusiness industry'. M Namvar , M Fathian , M R Gholamin , P Akhavan . *rd International Conference on Information and Financial Engineering*, (Singapore) 2011. 2011. IACSI Press. 12.

[Almajali et al. ()] 'Factors affecting the financial performance of Jordanian insurance companies listed at Amman Stock Exchange'. A Y Almajali , S A Alamro , Y Z Soub . *Journal Management Research* 2012. 4 (2) p. .

[Rehman ()] 'How to explore the value added impact of intellectual capital components on the productivity, profitability and market value of a firm'. S Rehman . *The International Research Journal of Science Management* 2012. (7) p. 1.

[Brymer et al. ()] 'Human capital pipelines: competitive implications of repeated inter-organisational hiring'. R A Brymer , J C Molloy , B A Gilbert . *Journal of Management* 2014. 40 (2) p. .

[Singh ()] 'Human resource accounting: Challenge for accountants'. M Singh . *International Research Journal* 2009. 2 (5) p. .

[Rehman et al. ()] *IC performance and its impact on corporate performance: an empirical evidence from*, W Rehman , C A Rehman , H Rehman , A Zahid . 2011. 1997. Roos , G. & Roos, J.. 30 p. . (Measuring your company's intellectual performance. Long Range Planning)

[Onafalujo et al. ()] *Impact of international finance reporting standards on insurance management in Nigeria*, A K Onafalujo , P O Eke , B H Akinlabi . 2011. Euro-Journals Publishing, Inc. 12 p. .

[Yahaya ()] 'Impact of investment in human resource training and development on employee effectiveness in Nigerian banks'. K A Yahaya . *Journal of Social & Management Studies* 2006. 12 p. .

[Alaka et al. ()] 'Impact of strategic planning on the performance of insurance companies in Nigeria'. N S Alaka , A A Tijani , O A Abass . *European Journal of Humanities and Social Sciences* 2011. 5 (1) .

[Demartini and Paoloni ()] 'Implementing an intellectual capital framework in practice'. P Demartini , P Paoloni . doi: 10. 1108/14691931311289020. *Journal of Intellectual Capital* 2013. 4 (1) p. .

[Rowbottom ()] *Intangible asset accounting and accounting policy selection in the football industry (Doctoral dissertation)*, N Rowbottom . 1998. U.K. University of Birmigham

[Volkov and Garanina ()] 'Intangible Assets: Importance in the knowledge-based economy and the role in value creation of a company'. Volkov , T Garanina . *Electronic Journal Management* 2007. 5 (4) p. .

[Abdulai et al. ()] 'Intellectual capital & firm performance: An empirical study of software firms in West Africa'. M S Abdulai , Y Kwon , J Moon . *The African Journal of Information Systems* 2012. 4 (1) p. .

[Chiucchi ()] 'Intellectual capital accounting in action: Enhancing learning through interventionist research'. M S Chiucchi . *Journal of Intellectual Capital* 2013. 14 (1) p. .

[Uadiale and Uwuigbe ()] 'Intellectual capital and business performance: Evidence from Nigeria'. O M Uadiale , U Uwuigbe . *Interdisciplinary Journal of Research in Business* 2011. 1 (10) p. .

[Wang ()] 'Intellectual capital and firm performance'. M S Wang . *Annual Conference on innovations in Business & Management* 2011.

[Clark et al. ()] *Intellectual capital and firm performance in Australia. Working paper series no*, M Clark , D Seng , R H Whiting . 2010. Department of Accountancy and Business Law

[Muhammad and Ismail ()] 'Intellectual capital efficiency and firm's performance: study on Malaysian financial sectors'. N M N Muhammad , M K A Ismail . *International Journal of economics and Finance* 2009. 1 (2) p. .

[Ong et al. ()] 'Intellectual capital efficiency in Malaysian food& beverage industry'. T S Ong , L Y Yeoh , B H The . *International Journal of Business and Behavioural Sciences* 2011. 1 (1) p. .

[Corcoles ()] *Intellectual capital management and reporting in European higher education institutions. Intangible Capital*, R Corcoles . 2013. p. 9.

[Salman and Mahamad ()] 'Intellectual capital measurement tools'. R T Salman , T B Mahamad . *International Journal on Social Science Economics & Arts* 2012. 2 (2) p. .

[Rehman et al. ()] 'Intellectual capital performance and its impact on financial returns of companies: An empirical study from insurance sector of Pakistan'. W Rehman , M Ilyas , H Rehman . *African Journal of Business Management* 2011. 5 (20) p. .

[Depablos ()] 'Intellectual capital reporting in Spain: A comparative view'. P Depablos . *Journal of Intellectual Capital* 2003. 4 (1) p. .

[Soumet (2007)] *Intellectual Capital Statement*, D Soumet . 2007. June. (Technical paper on Zone Industrielle Nord, VMI 86507 MONTAIGU)

[Nielsen et al. ()] 'Intellectual capital statements on their way to the stock exchange'. C Nielsen , P N Bukh , J Mouritsen , M R Johansen , P Gormsen . *Journal of Intellectual Capital* 2006. 7 (2) p. .

[Edvinsson and Malone ()] *Intellectual Capital: realising your company's true value by finding its hidden brainpower*, L Edvinsson , M S Malone . 1997. New York, USA: Harper Business Inc.

[Moslehi et al. ()] 'Introducing a toolbox for IC measurement in the Iran insurance industry'. A Moslehi , A Mohaghar , K Badie , C Lucas . *The Electronic Journal of Knowledge Management* 2006. 4 (2) p. .

[Asadi ()] *Investigating the effect of intellectual capital on the value creation of c companies listed in Tehran Stock Exchange*, L Asadi . 2012. Science Road Publishing Corporation. 2 p. 12.

[Pulic et al. ()] 'Investigating the impact of intellectual capital on organizational performance: A case study in an Iranian medical science university'. A Pulic , M Rafiei , H Ghaffari , R Parsapur . *African Journal of Business Management* 2004. 2012. 8 (1) p. . (Intellectual capital-does it create or destroy value? Measuring Business Excellence)

[Asadi ()] 'Measuring intellectual capital: a new model and empirical study'. L Asadi . *Journal of Intellectual Capital* J. Chen, Z. Zhu & H.Y. Xie (ed.) 2012. 5 (1) p. .

[Pulic ()] 'Measuring the performance of intellectual potential in knowledge economy. Paper presented at the 2 nd McMaster World Congress'. A Pulic . *International Journal of Technology Management* 1998. 2000. 20 (5) p. . (VAIC -an accounting tool for IC management)

[Bontis ()] 'National intellectual capital index: A United Nations initiative for the Arab region'. N Bontis . *Journal of Intellectual Capital* 2004. 5 (1) p. .

[Epetimehin and Ekundayo ()] 'Organisational knowledge management: Survival strategy for Nigeria insurance industry'. F M Epetimehin , O Ekundayo . `retrievedfromwww.centresinpub.org` *Journal of Management and Corporate Governance* 2011. 3 p. .

[Almajali et al. ()] 'Ownership structure & financial performance: Evidence from Panel Data of South Korea'. A Y Almajali , S A Alamro , Y Z Al-Soub . *Corporate Ownershi &Control* S. Lee (ed.) 2012. 6 (2) p. .

[Bataineh and Zoabi ()] 'The effect of intellectual capital on organisational competitive advantage: Jordanian commercial banks (Irbid District): An empirical study'. M Bataineh , M Zoabi . *International Bulletin of Business Administration* 2011. (10) p. . (Retrieved from www.eurojournals .co)

[Appuhami ()] 'The impact of intellectual capital on investors' capital gains on shares: An empirical investigation of Thai Banking'. B A R Appuhami . *Finance & Insurance Sector. International Management Review* 2007. 3 (2) p. .

[El-Bannany ()] 'The importance of intellectual capital and its effect on performance measurement systems'. M El-Bannany . *Managerial Auditing Journal* C. Usoff, J. Thibodeau & P. Burnaby (ed.) 2008. 17 (1&2) p. .

[Cuganesan et al. ()] 'The practice of human capital reporting among Australian financial institutions'. S Cuganesan , T Carlin , N Finch . *Journal of Finance and Accountancy* 2007. (5) p. 1.

[Ahmad and Mushraf ()] 'The relationship between intellectual capital and Business performance: An empirical study in Iraqi industries'. S Ahmad , A M Mushraf . *International Conference on Management & Artificial Intelligence* 2011. 2011. 6 p. .