IMPACT OF INTELLECTUAL CAPITAL EFFICIENCY ON THE FINANCIAL PERFORMANCE OF FINANCIAL INSTITUTIONS IN YAOUNDE, CAMEROON

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Abstract

It is no doubt that successful companies tend to be those that continually innovate, relying on new technologies and emphasizing on skills and knowledge of their employees. Knowledge being the new engine of financial institutions, development has become one of the most important aspects in recent years and value is generated by intangibles assets. Aspiring companies have realized that Intellectual Capital Efficiency is important in understanding the financial performance of financial institutions. This study tries to investigate the efficiency of intellectual capital and financial performance (profitability and productivity) of financial institutions Yaoundé, Cameroon. 60 companies were taken into consideration with data collected from the National Institute of Statistic for 2007-2008. Regression analyses was done between intellectual capital efficiency and financial performance and it was discovered that financial institutions still depend very much on capital employed since it is positively significant to profitability, while human capital and structural capital are not.

Keywords: Intellectual Capital efficiency; Profitability; Productivity; Value Added Intellectual Coefficient

GENERAL INTRODUCTION

1.1 Context

In the business world where most of the companies' values are based on intangible assets such as intellectual capital, the ability to recognise and estimate the sources of this value has become vital for economic development. This is because intellectual capital has been regarded as a prominent source of competitive advantages of various companies and is believed to have engendered an increase in business performance and

economic growth of countries. In order to be able to manage intellectual assets, one has to recognise where the value is coming from and how it is created in companies. This issue of intellectual capital has very much been in the spotlight and many authors have tried to define and propose measurement methods such as the traditional method formulated by of pulic (1990) – the Value Added Intellectual Coefficient (VAIC^{TM}) method. Intellectual capital can be defined as the soft assets that cannot be found on a balance sheet but certainly have an impact on future successes or failures of companies.

Although the importance of intellectual capital has been recognised, not much can be said about the disclosure of these assets. Starting in the late 1980s a few models have been developed in order to capture and visualise a company's intellectual capital but there are no standards, leaving it up to the companies themselves to decide how to present their hidden assets. Intellectual capital, therefore include; technology, customer information, brand name, reputation and corporate culture that are invaluable to a firm's competitive circumstance (Low and Kalafut, 2002). Intellectual capital also covers non physical sources of value related to employee capacities, organisational capabilities, ways of operating and the relationship with their stakeholders (Lonnavist, 2004). It is considered important for the competitiveness of many companies regardless of the industry. However, this topic is especially important for knowledge-intensive companies as most of their key resources are intangible (Sveiby, 1997; Stewart, 2001).

According to Stewart (1997), intellectual material- knowledge, information, intellectual property and experience can be put to use to create wealth, while Bontis (1998), defined intellectual capital as the result of the effective use of knowledge (the finish product) as opposed to information (the raw material). Intellectual capital may be used interchangeably with intangible knowledge or knowledge resources (Gutherie *et al*, 2003). For Wiig (1997), intellectual capital is an asset created through intellectual activities ranging from acquiring new knowledge (learning) and inventions to creating valuable relationships. According to Gutherie (2001), intellectual capital is the difference between a company's market value and its book value. The most famous definition of intellectual capital as proposed by Edvinsson (1997) states that -'the intellectual capital of a firm is its possession of the knowledge: apply experience, organisational technology, customer relationship and professional skill that provide it with a competitive edge in the market'.

Thus, intellectual capital is an amalgam of four types of capital:

- Human capital
- Structural capital
- Customer (relational) capital and
- Intellectual property.

Intellectual capital can thus be located in its people, its structure, its customers and its knowledge. In this context, intellectual capital encompasses aspects related to:

1. Tacit knowledge and innovativeness of the employees.
2. Infrastructure of human capital, that is, good working conditions, innovation and improvement processes of structural capital.
3. External relationships of the firm such as the customer (relational) capital. These are the key drivers of organisational performance and creation of future wealth (Bontis et al, 2000, Riahi-belkaoui 2003). In realising goals of a progressive and dynamic financial institution and desire to become knowledge based economy, greater efforts must be directed to building human intellectual capital (Lepak and Snell, 1999).

The role of human capital is pivotal to the development of a world class capital market. The financial institutions now have a prime position to be more innovative, relying on new technologies and emphasizing on skill and knowledge of their employees rather than on assets such as plants or machinery. This is due to

the intense competitive pressure which arises from changes in the financial environment, technological advancements and the needs of the consumers in terms of product quality. Therefore, financial institutions need to anticipate and respond to these demand and expectations. Hence, highly skill individuals are needed to facilitate the delivery of high value-added products and services as well as the competencies to build consumers confidence and trust (Mavridis, 2004).

Moreover, financial institutions such as banks are knowledge-intensive, skill-based and relationship-rich industry. In an increasingly complex and more liberal environment, the competitiveness of banking institutions will depend critically on the quality of human intellectual capital and the extent to which the industry is able to leverage or use these talents. Although intellectual capital has been recognised as the driving force of firm's wealth, there are many issues that are still being debated. In addition to the issue of the development of measurement models that best explain the invisible or hidden values of firms, various attempts have been made by companies and countries to develop an intellectual capital disclosure framework to reflect values unexplained by traditional accounting.

On the other hand, it is not clear whether certain types of firms are more likely to focus on managing intellectual capital or not, but if they do then these firms view intellectual capital as a mission which is a critical resource and attempt to manage the intellectual capital according Usoff, *et al.*, 2002. The limitations of financial statements in explaining the financial performance is underlined by the growing belief that the source of economic value is no longer the production of material goods but the creation of intellectual capital. Intellectual capital include human capital and structural capital wrapped up in customers processes, database, brands and system (Edvinsson and Malone, 1997) and has been playing an increasingly important role in creating corporate sustainable competitive advantages (Kaplan and Norton, 2004). Giving the significance of emerging economics of the overall wellbeing and balance of the global economy, it is important to establish an understanding of the development of intellectual capital in different socio-political and economic settings.

1.2 Statement of the research problem

Since knowledge is invisible and intangible, it is not easily captured by any of the traditional measures - accounting or otherwise, which corporations master in their day to day operations. Using the concept of Skandia Navigator (see Bontis *et al*, 1999), Pulic (2000a, 2000b), depicted firms market value as created by capital employed and intellectual capital which consists of human capital and structural capital. Pulic proposed the Value Added Intellectual Coefficient (VAIC) method to provide information about the value creation efficiency of tangible and intangible assets within a company.

Instead of valuing the intellectual capital of a firm, the VAIC method mainly measures the efficiency of firm's three types of inputs: physical and financial capital, human capital and structural capital, namely the capital employed efficiency (CEE), the Human Capital Efficiency (HCE), and the Structural Capital Efficiency (SCE) are respectively taken into consideration. The summation of the three measures gives the VAIC. A high VAIC suggests better management utilisation of company's value creation potential. In this context, this study intends to explore the relationship between intellectual capital efficiency (Value Added Intellectual Coefficient (VAIC)) and performance of financial institutions in Yaoundé, Cameroon.

Although intellectual capital has been recognised as a firm's wealth driver, there are many issues that are still being debated. In this regard, a key question arises: "**What is the impact of intellectual capital efficiency on the financial performance of financial institutions in Yaoundé?**" Obviously, investors and financial markets attach value to the skills and expertise of Chief Executive Officers (CEOs) and other top management officers (Bontis, 2001). Recent contributions have suggested that knowledge and information are actually subject to increasing returns, as opposed to the decreasing returns typical of traditional resources (Bontis *et al*, 1999). If this is true, then knowledge and information should become even more attractive to

companies than before. Having a good base of knowledge means that a company can in future start leveraging that base to create even more knowledge, thus increasing its advantage on competitors.
The specific research questions are:

- What is the role played by human capital efficiency (HCE) on financial performance of financial institutions?
- What is the influence of structural capital efficiency (SCE) on the financial performance of financial institutions?
- What is the effect of capital employed efficiency (CEE) or physical capital efficiency (PCE) on the financial performance of financial institutions?

1.3.1 Main Objective

The principal objective of this study is to investigate the impact of intellectual capital efficiency on the financial performances of financial institutions in Yaoundé, Cameroon.

1.3.2 Specific Objectives

- ✓ To investigate the role played by human capital efficiency on the financial performance of financial institutions in Yaoundé.
- ✓ To assess the influence of structural capital efficiency on the financial performance of financial institutions in Yaoundé.
- ✓ To evaluate the effect of capital employed efficiency (physical capital efficiency) on the financial performance of financial institutions in Yaoundé.

1.4   Research hypothesis

These objectives suggest the following hypotheses:-

H1- Human capital efficiency is positively related to the financial performance of financial institutions.

H2- Structural capital efficiency is positively correlated with the financial performance of financial institutions.

H3- Capital employed efficiency (physical capital efficiency) is positively associated with the financial performance of financial institutions.

1.5   Significance of the study

The significance of our research is to show the impact of intellectual capital efficiency on the financial performance of financial institutions. These financial institutions are group under commercial banks, microfinance, and insurance companies in Yaoundé, Cameroon. It is obvious that in most companies or institutions today, knowledge is highly taken into consideration. This knowledge-base is particularly more important for financial institutions that consider the intellect of personnel and how they use this knowledge to increase the performance. We should be able to identify the various components of intellectual capital efficiency and also show how each has contributed individually to the performance of these companies. We should also be able to measure each component and know how it has added value to these companies.

1.6   Brief outline of methodology

The methodology used consists of stating and justifying the samples, variables retained and the empirical model.
Our sample will be made up of about 60 financial institutions including:

- Fourteen commercial banks
- Thirty-six microfinance institutions, and
- Ten insurance companies in Yaoundé, Cameroon.

The main data is collected from the National Institute of Statistics office in Yaoundé, while other data is collected from libraries and downloaded materials from the internet. The approach employed in our research is the 'hypothetico deductive' method. The treatment of data demands the construction of a model of analysis that requires the identification of variables and the computation of indices.

The dependent variables are those that are manipulated to identify effects on the subject which is performance and it is captured by the return on equity and employee's productivity. The independent variable is the intellectual capital efficiency which is captured by the value added intellectual coefficient (VAIC^{TM}).

1.7.1 Scope of the study

There are several financial institutions in Cameroon. We will delimit our study on financial institutions in Yaoundé. The choice for an empirical study of the financial institutions will be guided by comparing their performance with respect to their intellectual capital efficiency, and also, the relationship between intellectual capital efficiency (ICE) and their performance.

1.7.2 Limits of the study

Considering that there are several financial institutions in the ten regions of Cameroon, we will base our interest in one region (i.e.) Yaoundé which can be considered to be insufficient and may yield biased results. However, the availability of modern communications facilities has made it possible that all that is possible in financial institutions in Yaoundé can be transmitted to all financial institutions in the country. So concentrating only in Yaoundé may generate outcomes that can be fairly extrapolated to apply to financial institutions in other parts of Cameroon.

2.1 Conceptual considerations of intellectual capital efficiency

Conceptually ICE has the following component as shown below

See figure 1 below

Where HC is Human Capital, SC is Structural Capital; RC/CE is Regional Capital or Capital Employed and ICE which is Intellectual Capital Efficiency.

ICE as define by many authors all have one thing in common which is the ability of value creation potential and future earnings capabilities of non-physical assets or intangible assets. But to go deeply into these definitions we have to discuss first the origin of intellectual capital efficiency.

2.1.1 Origin and Definition of intellectual capital efficiency

Since the beginning of IC research in the early 1980s, several definitions have emerged such as that of these authors. Itami (1987) considers IC to include technology, customer information, brand name, reputation and corporate culture, which is invaluable to firm's competitive power. Brooking (1996) defines IC as the combined intangible assets which enable the company to function and sees an enterprise as the sum of its tangible assets and intangible assets

> **Enterprise = Tangible Assets + Intellectual Capital**

Stewart (1997) views Intellectual Capital as knowledge, information, intellectual property and experience that can be used to create wealth. Taking it further, Edvinsson (1997) equates Intellectual Capital with the sum of Human Capital, Structural Capital and Customer Capital i.e.:

$$ICE = HC + SC + CC$$

According to Bontis (2004), it was Machlup who first coined the term intellectual capital efficiency to emphasize the importance of general knowledge as essential to growth and development. After more than a decade, the term Intellectual Capital counts numerous interpretations and definitions. Bontis (2002) divergence can be explained by the view that the field is still in its 'embryonic stage' because it is yet to be fully exploited. Andreessen (2004) adds to this that each author just wants 'to convey a specific message that he thinks is important'. Some authors stress the importance of value creation (Edvinsson, Stewart; 1997); others stress the importance of value extraction (Sullivan, 1996). Some focus on knowledge (Stewart, 1997), others on intellectual properties (Brooking, 1996). Some use it as a synonym for 'core competencies' (Andreessen, 2004), others translate it as a 'capacity – to – act (Sveiby, 1997). While on our own part we consider Intellectual Capital to be a situation in which the knowledge – worker productivity is increased (i.e.) transform into value and when it becomes Intellectual Capital Efficiency we considered it to be the ability to transform knowledge into value so as to increase the productivity of the company.

2.2 The literature review of intellectual capital efficiency

Recently, research base on the theory of intellectual capital efficiency has shown an important aspect as far as the performance of financial institutions is concern. In effect, intellectual capital efficiency has help in contributing to the performance of financial institutions so as to meet up with the high status of developed economies that is probably why authorities in Cameroon are taking the challenge to become an emerging economy by 2035. Intellectual capital efficiency helps financial institutions to prepare to overcome problems in future as they face competition from other companies in the economy. Moreover, there are some important theories which cannot be left out when intellectual capital efficiency is discussed since they embody the intangibles resources of companies.

There is no doubt that intellectual capital efficiency has some foundation on which it principles are base. Looking critically on intellectual capital with a trough understanding of the literature review we are able to say that other resources influence the promotion of intellectual capital efficiency. The development of intellectual capital theory has been guided by the ideas and thoughts of a handful of influential practitioners, including Sveiby (1997), Kaplan and Norton, 1992 and Edvinson and Malone, 1997. These pioneers established the basis of the "intellectual capital standard theory" in which the talk of the theories of intellectual capital efficiency such as the Resource Base View of Penrose (1959) and Wernelfelt (1984), Strategic Intend Competent of Prahalad and Hamel (1989-1990) and the Competent Base View and Knowledge Base View of Prahalad and Wernelfelt (1984).

2.3 Linkages between intellectual capital efficiency and financial performance

Although we have critically discussed the relationship that exists between intellectual capital and Performance, we will now base our interest on the relationship between intellectual capital and financial performance of financial institutions. According to Chen *et al*. (2005), the relationship between the value creation efficiency and firm's market valuation and financial performance examination shows that the intellectual capital has a positive influence on the market value and the financial performance[1].Kujansivu and Lönnqvist (2005) examined the relation between monetary value of Intellectual Capital and value creation efficiency of Intellectual Capital of Finnish companies and found that intellectual capital value and

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[1] Chen et *al*. (2005), the relationship between the value creation efficiency and firm's market valuation and financial performance

Intellectual Capital Efficiency are somehow related. Richieri (2007) studies intellectual capital stock (CIA) and intellectual capital efficiency and corporate financial performance which were measured by return on asset, return on equity and ROS of 1000 biggest Brazilian companies. The results suggested the existence of a positive relation between both CIV and Intellectual Capital Efficiency and the dependent variables ROE, ROA and ROS. Ranjith A. (2007) investigated the impact of value creation efficiency of Intellectual Capital on investors' capital gain on shares of listed companies in Thailand Stock Exchange. They found that firms' intellectual capital has a significantly positive relationship with its investors' capital gain on shares. As mentioned above, this research clearly indicates the usefulness of intellectual capital on the corporate financial performance of Indian companies[2]. Moreover, Makki and Lodhi (2009) examine the relationship between intellectual capital and return on investment (ROI) using the VAIC developed by Pulic (1998). Their results indicated that intellectual capital efficiency can be used as a benchmark and strategic indicator to direct financial and intellectual resources towards the right direction to enhance the firm's ultimate corporate value. Kamath (2010) measures the performance of banks in Pakistan on a new dimension of intellectual capital. The study estimates the value added intellectual capital of the banks in Pakistan for a two year period and came out with the conclusion that private sector banks were doing much better than all other banks in Pakistan on intellectual capital efficiency levels. The good performance is attributable to efficient usage and management of human resources[3].

3.1 Theoretical framework of ICE
According to resource-based theory, a company is perceived to achieve a sustainable comparable advantage by controlling both its tangible and intangible assets (Belkaoui, 2003). Firer and Stainbank (2003) advocate that value added is a "more appropriate means for conceptualizing a company's performance."
See figure 2 below

The framework for this study as in the Figure shows that value added intellectual coefficient influences corporate performance and the market value of companies. This study is an adaptation of the study by Chen *et al.* (2005) of which the theoretical framework modified is depicted in the Figure. The information asymmetry on financial statements and the increasing gap between organizations' market and book value have drawn much attention to the credibility of the current reporting system. This widening gap between the market value and the book value of organizations has raised questions on the adequacy of the current reporting system. The difference between the market value and the book value of a company is said to represent its intellectual capital (Edvinsson and Malone, 1997).

Instead of directly measuring intellectual capital, Pulic (2000a, b) advocates that a firms' market value is created by capital employed and intellectual capital. Under Pulic's value added intellectual coefficient model, the efficiency of firms' inputs; physical and financial, human capital and structural capital are measured. The value of value added intellectual coefficient comprises of Capital Employed Efficiency, Human Capital Efficiency and Structural Capital Efficiency.

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[2] B.A Ranjith Appuhami (2007) investigated the impact of value creation efficiency of Intellectual Capital on investors' capital gain on shares of listed companies in Thailand Stock Exchange

[3] Reza Gharoie Ahangar, "The relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company", Accepted on the 3 September, 2010.

It is believed that investors will place a higher value for firms with greater intellectual capital (Belkaoui, 2003; Firer and Williams, 2003). As such, it is expected that intellectual capital plays an important role in enhancing financial performance and corporate value of financial institutions in Africa and in Cameroon in particular. Companies which show good financial performance are believed to have greater intellectual capital efficiency and if investors place different values for the three components of value added intellectual coefficient such as human capital efficiency, structural capital efficiency, and capital employed efficiency. It is also envisaged that a company that is more efficient in productivity, will also have higher intellectual capital.

Intangible assets have always existed in the operations of organizations. Diksi (1896) and Galbrais (1969) were the first persons who respectively used the phrases of intangible and intellectual capital (Kristandl and Bontis, 2007). During the recent decades, many activities have been done on these issues and the importance of considering information related to intangibilities has had a great growth. But researches and studies for intangibilities have had some basic problems including the lack of standard phrase. There are many concepts and titles which have been presented in this field and each of the researchers would provide a different type of definition for this phrase. This scientific difference has caused the procedure of research development to be so slow and until now no integrated definition has been presented in this field (Soei, 2007; Bontis *et al*. 1999; Andriessen, 2004 and Jourjsen, 2006).

Modern society can be described as a society based on a deep and broad penetration of scientific and technological knowledge in all spheres of social life and its institutions. By the mid-twentieth century, the society and the economy were primarily understood in the context of physical resources and physical labor. However, in modern society one perceives the tendency of decreasing the importance of physical resources and physical labor as the basic factors of production and sources of value creation. However, what is new is that property and labor, more than ever before, embedded in them the intangible component - knowledge.

Therefore, the knowledge society phenomenon indicates a significant structural economic changes and a transition from the industrial economy to economy intensively based on knowledge. Since an OECD classification of high technology industries, medium tech and low tech industries rests only on one indicator, namely intra natural Research and Development, which is open to two important objections. Firstly, it is by no means the only measure of knowledge-creating activities and secondly, it ignores the fact that this knowledge is relevant to an industry but it can be distributed across many sectors or agents: such as the low-research and development industry may also be a user of knowledge generated elsewhere.

Modern innovation theory sees knowledge-creation in a much more diffuse way. Firstly, innovation rests not on discovery but on learning. Learning need not necessarily imply discovery of new technical or scientific principles, and can equally be based on activities which recombine or adapt existing forms of knowledge; this in turn implies that activities such as design and trial production can be knowledge-generating activities (Lundvall, 2003). A second key emphasis in modern innovation analysis is on the external environment of the firm. Firms interact with other institutions in a range of ways; these include purchase of intermediate or capital goods embodying knowledge. The installation and operation of such new equipment is also knowledge-creating and also the purchase of licenses used to protect knowledge.

Finally, firms seek to explore their markets. Given that innovations are economic implementations of new ideas, then the exploration and understanding of markets, and the use of market information to shape the creation of new products, are central to innovation. These points imply a more complex view of innovation in which ideas concerning the properties of markets are a framework for the recombination and the creation

of knowledge via a range of activities. This framework research and development is important, but tends to be seen as a problem-solving activity in the context of innovation processes, rather than an initiating act of discovery (Borras. 1997). Relevant knowledge base for many industries is not internal to the industry, but is distributed across a range of technologies, actors and industries[4]. These inter-agent or inter-industry flows conventionally take two basic forms, 'embodied' and 'disembodied'. Embodied flows involve knowledge incorporated in to machinery and equipment. Disembodied flows involve the use of knowledge, transmitted through business cooperation's, scientific and technical literature, consultancy, education systems, and movement of personnel activities. The basis of embodied flows is the fact that most research-intensive industries (such as the advanced materials sector or the information and communication technology complex) develop products that are used within other industries. Such products enter as capital or intermediate inputs into the production processes of other firms and industries: that is, as machines and equipment, or as components and materials. When this happens, the improvements of performance are generated in one firm or industry which therefore shows up as productivity or quality improvements in another. Competitiveness within 'receiving' industries depends heavily on the ability to access and use such technologies.

Clearly, many different kinds of skills, scientific disciplines and knowledge areas are involved in the functions and activities in industry of financial sectors. The core knowledge areas of financial institutions include the banking sectors, the insurance sectors and the micro finance institutions. Despite the perception, this is a sector with relatively low levels of internal research and development; it might well be known that it is one of the most knowledge-intensive sectors of the entire economy.

3.2 Methodology

Intellectual capital efficiency and the financial performance of financial institutions have been considered to have three component of intellectual capital efficiency, which are human capital efficiency, structural capital efficiency and capital employed efficiency and are calculated with the help of value added intellectual coefficient and on the other hand Financial performance has two components which are return on asset and employees productivity as discuss by Ahangar (2010)[5] which is consider as the profitability and productivity of Financial Institutions. He also adopted Pulic's (1998, 1999) method in calculating intellectual capital efficiency that is the use of the VAIC^{TM} of which there exist three important components which are human capital efficiency, structural capital efficiency and capital employed efficiency which has also been of great important to all other researchers who have investigated in the domain of intellectual capital efficiency. We also used the same financial performance component as Ahangar (2010) such as Return on Assets (ROA) use for profitability and Employees Productivity (EP) for productivity.

3.2.1 The method of analysis

The empirical analyses of this research make use of the correlations between the dependent and the independent variables obtained by the Pearson product moment correlation analysis. Statistical values such as the Standardised coefficients (β) and the Coefficient of determinations (R-square) are used in the following discussion to illustrate the predictive and explanatory power of the models. Here multiple

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[4] A distributed knowledge base is a systemically coherent set of knowledge, maintained across an economically and /or socially integrated set of agents and institutions.

[5] The relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company

regression models are used because there are many independent variables. The proposed regression models are shown in

See Table 1 below

Where, ROA= Return on Assets, EP is Employees performance, Value Added Intellectual Coefficient (VAIC[TM]), Physical Capital Intensity (PCI), Asset Turnover (ATO) and Leverages (LVE). The two regression in the Table were used to enable us analyse our variables. Looking at the first two equations we notice that they were use to analyse the relationship that exist between the independent variable (VAIC™) which is the combination of human capital, structural capital and capital employed and the two dependent variables (ROA and EP).

3.2.1.1 Independent variables[6]

The Value Added Intellectual Coefficient™ (VAIC™) methodology developed by Pulic (1998) forms the underlying measurement basis for the independent variable in this present study. In his words VAIC™ is an analytical procedure designed to enable management, shareholders and other relevant stakeholders to effectively monitor and evaluate the efficiency of VA by a firm's total resources and each major resource component. VAIC™ is a composite sum of two indicators these are: (1) Capital Employed Efficiency (CEE) – indicator of VA efficiency of capital employed; (2) Intellectual Capital Efficiency (ICE) – indicator of VA efficiency of company's Intellectual Capital base. Intellectual Capital Efficiency is composed of (a) Human Capital Efficiency (HCE) – indicator of VA efficiency of human capital; and (b) Structural Capital Efficiency (SCE) – indicator of VA efficiency of structural capital.

Value Added (VA): are newly created value, calculated as follows

VA = Operating Profit + Employee costs + depreciation + Amortization or

VA = OUTPUT (Total Income) – INPUT (All costs of purchasing goods and services from the market)

Human Capital (HC): are overall employee expenses (salaries, education, and training); in this analysis considered an investment, not cost, and thus not substantial part of INPUT any more. There: HUMAN CAPITAL EFFICIENCY (HCE = VA / HC)

Structural Capital (SC): are results of Human Capital's past performance (organisation, licenses, patents, image, standards, and relationship with customers).

Therefore: STRUCTURAL CAPITAL EFFICIENCY (SCE = SC / VA)

Capital Employed (CE): are all material and financial assets.

CAPITAL EMPLOYED EFFICIENCY (CEE = VA / CE)

Intellectual Capital Efficiency (ICE = HCE + SCE): are indicators which show how efficiently IC has created value. They are also indicators which show how much VA is created on each monetary unit invested in CE.

Value Added Intellectual Coefficient (VAIC[TM] = ICE + CEE): The two sub-components of VAIC™ form the independent variables in our research. They indicate the value creation efficiency of all resources (sum of the previous indicators). It expresses the intellectual ability of a company or firm.

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[6] Intellectual Capital Efficiency and Firm's Performance: Study on Malaysian Financial Sectors by Nik Maheran Nik Muhammad *et al* (2009); Testing the relationship between intellectual capital and firms' market value and financial performance: evidence from Bangladeshi industries by Tashfeen Hussain *et al* (2010); and others.

3.2.1.2 Dependent variables

In this study we are going to base our interest on the profitability (ROA) and the productivity (EP) of the financial institutions in Yaoundé, Cameroon.

Profitability (ROA): - Profitability shows the degree to which a firm's revenues exceed over cost. It is the ratio of the net income (less preference dividends) divided by book value of total assets as reported in the annual reports; (Williams and Firer, 2003; Chen *et al*,2005; Ahangar, 2010).

 ROA will help us to reflect on the firm's efficiency in using her total assets while holding the financial policy of the firm constant.

Return on Assets (ROA) = (Net Income –Preference Dividends) or Profit before tax / Total Assets or Average Total Assets

Employee productivity (EP): Employee productivity is a measure for the net sales per employee, which reflects employees' productive capability (Chen, Cheng and Hwang, 2005; S Najibullah, 2005; Raze G. Ahangar, 2010). It is calculated as follows: EP = net sales for the period/ number of employees. Employees Productivity is a very important indicator in the calculation of the financial performance because it measures the net value added per employee in a firm thereby reflecting the employee's productivity and can also be calculated by Employee Productivity = Profit before Tax / Number of Employees.

3.2.1.3 Control variables

For the purpose of this empirical analysis our study uses the correlation and the multiple regressions as the underlying statistical tests. In conducting the multiple regressions analyses following control variables are generally included;

Leverage (Lev): -Financial leverage and debt structure as measured by total debt divided by book value of total assets is used to control for the impact of debt servicing on corporate performance and wealth creation (Riahi and Belkaoui, 2003).

Physical capital intensity (PC): Physical capital intensity is measured by a ratio of a company's fixed assets to its total assets (Firer and Stainbank, 2003; Firer and Williams, 2003) is used to control for the impact of fixed assets on corporate performance. The assumption is that company's fixed assets have significant impact on company's financial performance.

Assets turnover ratio (ATO): It is the ratio of total turnover to total assets. This ratio is used to control for the impact of total assets on corporate performance.
See figure 3 below

3.2.1.4 The source of data collection

The data used in this our research were collected from the National Institute of Statistic in Yaoundé which concern Micro Finance, Insurance and Commercial Banks of the City of Yaoundé, Cameroon. Some of the rough information was collected from financial institutions themselves and it was notice that these Financial Institutions have contributed greatly to the growth and development of the country in general and the development of human skills in particular through the encouragement of education which has reduces the rate of unemployment in the Country. These Financial Institutions were selected on the basics of the availability of information necessary for conducting the study for the periods 2007 - 2008. Since we have based our study only on a period of two years we will say that the sampling is easy and convenience for

analyses but the data collected from the NIS is not clear enough so we have analyse the variables clearly for a quick understanding. For this reason we have to use "immobilisation financière" as the office equipments and "autres immobilisation financière" as other office equipments such as intangibles for which their sum will give us the structural capital. Apart from the structural capital, capital employed is obtained with the help of the physical assets +financial assets or still total assets – intangible assets at the end of period t. From our data, the "total actif immobilisé" and "actif immobilisé" when sum together is considered as the total assets while intangible assets are the "autres immobilisation financiers". For the capital employed we used "Total actif immobilisé" and for the human capital we used the simple application which was as such structural capital (SC) = value added (VA) – human capital (HC) so to continue we had to make human capital the subject of the formula which permitted us to get our human capital as shown below: SC = VA – HC, SC + HC = VA,

HC = VA – SC. From the above it is clear that our human capital can be obtained by deducting structural capital from the value added as given in the data from NIS. To deduce the dependent variables from our data we used "resultat d'exploitation" as our profit before tax and for total assets we sum "total actif immobilisé" and "actif immobilisé" which permitted us to calculate our Return on Assets (ROA) that is the profitability. Moreover, the employee productivity is also a very important factor as far as the financial performance is concerned because it helps us measure the net value added per employee in the development or growth of a firm. So we equally used the number of employees in each firm and also the profit before tax that is "résultat d'exploitation" and the "effectif" as the number of workers which enable us to calculate the productivity.

3.2.1.5 The Samples used
Of the thousand of Financial Institutions existing in Cameroon in general and Yaoundé in particular, only 30 companies were used for this research within the period of 2007 – 2008. But notwithstanding, these Financial Institutions are subdivided into **36** Micro Finance, **10** Insurance Companies, and **14** Commercial Banks. Some of the preliminary information concerning these Financial Institutions were equally collected from some relevant articles and from some documents gotten from the Ministry of Finance in Yaoundé.

3.2.1.6 Software Used
As far as our research is concern we were able to conduct our regression analyses with the help of the STATA 11 which is a statistical package for managing, analyzing, and graphing data.

4.1 Statistical analyses of data
The research sample is drawn from some financial institutions in Yaounde for the years 2007/2008. A sample of sixty (60) companies were maintained after eliminating companies with insufficient data for analysis and the data remaining were now used to carry out the descriptive statistics, pair-wise correlation and the regression analyses.

4.1.1 Analyzing the Descriptive Statistics
This table presents the descriptive statistics for the dependent and independent variables. The mean for return on assets is 0.020, which implies that that the utilization of total assets is very low in increasing profitability of financial institutions in Yaounde. On the other hand, the mean for employee productivities is 5.14 which imply a high role played by employees in increasing productivity of financial institutions. The mean of the value added intellectual coefficient is 5.90 which implies that financial institutions can attain it performance with the help of this variables which are human capital efficiency, structural capital efficiency and capital employed efficiency when combine together. However, if the components are examined

individually, it is evident that human capital with mean of 8.63 which is more efficient when compare to the capital employed mean which is 0.45 but for the structural capital the mean is -3.17 which indicates that it has a negative effect on the financial performance of financial institutions in Yaounde.
See Table 2 below

4.1.2 Diagnosing the correlation analyses

The output given, the table below depicts that there is a significant positive relationship between return on assets, employees' productivities, human capital efficiency, capital employed efficiency, assets turnover, leverages and physical capital intensity is significant at 0.05 levels. This means that return on asset is positively associated with employees productivity (productivity), human capital efficiency, capital employed efficiency, assets turnover and leverages. As such when the productivity increases it is said to increase the human capital efficiency and the capital employed efficiency. The statistical diagnostic also confers that there is no co-linearity among the explanatory variables as well as among the dependent variables as well. This is evident by the results below which shows a high pair-wise correlation between the explanatory variables that is capital employed efficiency and human capital efficiency which is 0.6025 at 0.05 level of significant. While the other explanatory variables have low pair-wise correlation between them such as capital employed efficiency and structural capital efficiency with 0.1553 level of significant and structural capital efficiency and human capital efficiency with 0.0847 level of significant. As such the data is free from any co-linearity problems and the measures are sufficiently independent of each other. But it is obvious that the capital employed efficiency and human capital efficiency have a great role to play in the performance of financial institutions in Yaounde.
See Table 3 below

4.2 Linear multiple regression results

We are going to analyze the models in the above chapter of which model 1 examine the relationship between the dependent variables and the value added intellectual coefficient which is the combination of human capital efficiency, structural capital efficiency and capital employed efficiency while model 2 deals with the relationship between the dependent variables and the individual independent variables such as human capital efficiency, structural capital efficiency and capital employed efficiency.

4.2.1 Linear Regression for Model 1

Model 1 examine the relationship between the ratios of financial performance that is return on assets and employees productivities and the aggregate measures of intellectual capital value added intellectual coefficient. Here we notice that the variable englobling human capital efficiency, structural capital efficiency and capital employed efficiency is not significant to profitability of financial institutions in Yaounde but realized that two of the control variables that is assets turnover is positively significant to profitability at 5% level which is 0.034, while leverages is also positively significant to profitability but at 1% level which is 0.000. Still with the first model we realize that the second dependent variable of financial performance which is base on productivity. With this discovered that the aggregate measures of intellectual capital value added intellectual coefficient is not significant to productivity but the leverages which is one of the control variable is the only variable which is significant to productivity at 5% level with a value of 0.045.
See Table 4 below

4.2.2 Linear Regression for Model 2

As for this model, we shall examine the financial performance with variables such as return on assets and employees productivities with each of the independent variables to see which of the variable is positively related to the financial performance of financial institutions in Cameroon.

This will help us to verify our hypothesis stated at the beginning of our research. Firstly we will have to verify that of human capital efficiency with the variables of financial performance. After the analysis we notice that it is not significant with the variables of financial performance that is profitability and productivity because what employers are supposed to do in recruiting employees is not done. Instead of recruiting employees base on their competence, skills, knowledge or experience they instead recruit workers base on family or friendship so with this the workers do not put in their best because they know that nothing could be done to them that is probably why the first hypothesis does not hold. While we instead discovered that the control variable leverage is significant at 1% and for the employee's productivity only the control variables asset turnover and leverage are significant at 5% level respectively.

Moving to the second independent variable that is structural capital efficiency which reflects the second hypothesis we verified from the regression tables in the appendix to see whether the structural capital efficiency is significant to profitability and productivity of financial institutions in the country. Again it is seen that structural capital efficiency is probably not significant to the financial performance of financial institutions in Yaounde because the environment in which the workers work is not conducive and there are no recent instrument that meet up with the need of this evolving world. Among the control variables on profitability we can see that assets turnover is significant to structural capital efficiency at 5% while leverage is significant to structural capital efficiency at 1% level. On the part of productivity the only variable which is significant is leverage at 5% level.

For the third hypothesis the only independent variable that holds with the dependent variable is the capital employed efficiency. The analysis shows us that productivity is not significant to capital employed efficiency and only leverage is significant at 10% level to the dependent variable of productivity while the other dependent variable profitability is significant to capital employed efficiency at 5% level showing that there is high rate of saving by and also high rate of borrowing which intend brings in much profit which is use for the purchase of some of the assets that is probably why this hypothesis holds only for profitability as the dependent variable. In the null shade, we came to conclude that the first and the second hypothesis does not hold here because the recruitment conditions are not respected and only the third hypothesis holds indicating that capital employed efficiency is positively associated with profitability of financial institutions in Cameroon, Yaounde because of the high profit it brings in as interest from borrowing.
See Table 5 below

5.1 Discussions

With globalization, Financial Institutions are increasingly confronted with worldwide competition. In order to build and sustain their competitive advantages, the knowledge and expertise of organizations, staffs need to be seen as critical strategic resources. This research study investigates whether Intellectual Capital Efficiency can explain the financial performance of financial institutions in Yaoundé, Cameroon. We focused on the explanatory power of financial performance examined in two dimensions namely profitability and productivity.

One research question was formulated for this study which dealt with showing the impact of Intellectual Capital Efficiency on the financial performance of financial institutions in Yaoundé. In respect to the

research question the result indicate that Intellectual Capital Efficiency has an explanatory power with respect to profitability but not productivity. This explanatory power is in respect to profitability which is positive to capital employed efficiency as shown in table 4.2.2 for the second regression model. The positive relationship between a single variable of Intellectual Capital Efficiency which is capital employed efficiency and profitability shows that with an Adj.R² coefficient of about 51.8% tells us that more effort need to done as far as the physical capital is concern as indicated by the regression model 2^a. It is an extremely encouraging result which implies that management should be able to realize full potential of the Intellectual Capital Efficiency, with the maximization of investment decisions of stakeholder's results.

The movement of money through a financial institution is ultimately the most tangible measure of its value. It is also the source of its rewards in terms of profits, salaries and earnings. Apart from the changes in technology, organization and management theory, it is merely an allegory (an element in which each variable has an effect) of how to attach monetary value to the activities and assets. Consequently, if Intellectual Capital Efficiency has a value, then it should be converted into cash, profits and earnings. This research study provides empirical evidence that Intellectual Capital Efficiency is an asset that can be utilized as a stimulating vehicle for improving the profitability of financial institutions. Looking at these models we can notice that financial institutions in Yaoundé seek to increase their profitability through the employment of intangible assets which put in less effort into using their Intellectual Capital Efficiency. Alternatively any company that focuses it attention on ICE appears to place less emphasis on the effective use of tangible assets but on intangible assets.

These are some possible explanations for the phenomenon that management focuses attention on investments in tangible assets. Firstly, although management realizes that there are a variety of important benefits to investments in ICE; such investments are inherently more risky than investments in tangible assets. Secondly management is unable to quantify the benefits of investing in Intellectual Capital Efficiency and their costs maintenance is very high. There are two principal reasons for the management of the ability of the quantity of the benefit of investing in the Intellectual Capital Efficiency namely;

1) Comprehension of the impact of intellectual capital in developing countries such as Cameroon is still very much in its infancy.
2) The propensity for the complexity to respect the investment in it ICE suggests that a rigorous approach to the managing and measuring of Intellectual Capital Efficiency which requires a large investment training and development by the organization to ensure that its management has the expertise and ability to manage Intellectual Capital Efficiency.

The principal purpose of this research study was to investigate the relationship between the efficiency of intellectual capital in a company and two dimensions of financial performance. The overall empirical findings are based on the linear regression analysis of the relationship between intellectual capital efficiency and the two dimensions of a company's financial performance, clearly indicate that intellectual capital efficiency that is capital employed efficiency is the only positive predictor of a company's financial performance in terms of profitability. This finding suggests that the more intensively a company manages its intellectual capital, the greater its profitability can be, which is a major break-through in the understanding of how intellectual capital measures relate to financial performance. Consequently, the empirical findings suggest that there are efforts to improve Cameroon's intellectual capital in general and Yaoundé in particular. However, the financial institutional and business environment in Cameroon should endeavor to gain a better understanding of the measurement and the management of intellectual capital efficiency.

5.2 Recommendations

The following recommendations should be a greater acknowledgment and incorporation of intellectual capital factors of production in Yaoundé, Cameroon.

5.2.1 Knowledge leadership

The performance of any organization, whether small or large, is directly related to the quality of its leadership. Good leaders will direct their organizations to greater heights of achievement in the domain of productivity and profitability. Leadership involves bringing about change, envisioning a new future for the organization and motivating people to commit and dedicate themselves to new directions. Cameroon needs good knowledge leadership in all her domain in the economy which will help her move forward. Intellectual capital efficiency is largely dependent on the ability and willingness of the chief executive officer of any organization to drive the process (Ramosedi 2000-2001).

Business executives should be able to channel their organization's intellectual capital as a source to achieve a competitive advantage. They should be held responsible for justifying the value of intangible that is being developed in their organizations. An organization's leadership should be committed to the development and implementation of a strategy for intellectual capital. Management will have to take the lead until an ideal self-motivating learning organization has emerged and the banner for knowledge management is flying high.

5.2.2 Education and training

To take advantage of the process of globalization, Cameroon should be able to produce goods and services of high quality and at competitive prices. It should be ensured that conditions are created through policy, law and a collective ethos that facilitate development. Education and training together form the vital weapon in a country's to achieve these aims. Investment in the financial institutions of Cameroon should not be perceived to be a luxurious way of putting into use our knowledge to promote development. Education should become a basic human right that is essential for human dignity and for any good citizen.

Education is also vital for the achievement of economic and social development. Continuous training and development is the watchword for the modern financial institutions in Cameroon. Financial institutions in Yaoundé, Cameroon should establish some aspects of their employee training programmed which will actually enhance productivity. Through understanding their intellectual capital efficiency, financial institutions in Yaoundé, Cameroon can redesign their training programmed to best enhance their assets.

5.2.3 Potential limitations of this research study

The findings of this study are subject to some limitations that provide initiatives for future research. One possible reason for the varied results of the study is the methodology used for measuring the value of intellectual capital efficiency. The focus of this study is on one specific measure of intellectual capital efficiency. The VAIC^{TM} methodology cannot prescribe in precise terms the actions that management or regulators should take in a company, business sector or economy to strengthen value creation. Similarly, this methodology does not provide stakeholders, such as investors, with a precise tool with which to deal with their specific interests in a company or business sector.

The methodology of value creation efficiency is only a power pointer that is an effective starting point from which to direct further in-depth investigation of any financial institutions, business sector or economy with

the support of other measurement and management tools of intellectual capital. A future study could explore a different standardized measure for the performance of intellectual capital.

The authors believe that the basic theoretical construction of the regression models is correct. What is missing from the current study is accounting for the lag between the cost of implementing and investing in knowledge, human and intellectual capital and the subsequent observable results. Other research can be base on different hypotheses and also different regression models or constructions so as to have a different face of the previous study.

Future studies could use the same basic hypotheses and regression construction, but implement the study in terms of a longitudinal design which would need to correct changes in data relative to the time element, such as inflation. Despite possible limitations of using single-period data, a relatively focused sample and a single domestic location, the results of the present study provide valuable insights into the relationship between intellectual capital efficiency and the perceptions of a company's financial performance. Furthermore, this study contributes to the expansion of the current research study within the intellectual capital discipline towards alternative areas of interest.

5.3 Conclusions

This research study points out the role played by intellectual capital efficiency on the financial performance of financial institutions in Yaoundé. Empirical evidence was found to have a positive relationship between the core explanatory independent variable (intellectual capital efficiency) and profitability (an accepted measure of a company's financial performance).

These results are particularly promising, because they reveal the possibility that investments in intellectual capital efficiency at a given point in time may influence the prosperity of financial institutions, in terms of earnings and profits, which hopefully will influence shareholder value at a later date.

Clearly, the results of this exploratory study in Yaoundé, Cameroon are encouraging. However, they represent only another step in the process of creating and setting standards for the knowledge era. Nevertheless, there is compelling evidence that investments in intellectual capital efficiency do matter. If this assertion is true, it will result in profound changes in the ways in which financial institutions work and the way they are valued in Yaoundé, Cameroon. The rise of intellectual capital is inevitable, given the historical and technological forces that are sweeping the modern world. Intellectual capital will come to dominate the way in which institutions are valued, because it alone captures the dynamics of organizational sustainability and value creation. Intellectual capital efficiency alone recognizes that modern financial institutions changes so rapidly that everything dependent on its talents, the dedication of its people (human capital) and the quality of the tools that they use (structural capital).

The Cameroonian government and business community should stand up and be counted as part of this intellectual capital movement and be better prepared and more experienced than its competitors. This will help tossed forward our effort so as to meet up the objectives of any develop economy.

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TABLES AND FIGURES

Table 1: REGRESSION MODEL

Model	Regression equations [7]
$ROA_i = \beta_0 + \beta_{i1}VAIC^{TM} + \beta_{i2}PCI + \beta_{i3}ATO + \beta_{i4}LVE + \mu_1$	1^a
$EP_i = \beta_0 + \beta_{i1}VAIC^{TM} + \beta_{i2}PCI + \beta_{i3}ATO + \beta_{i4}LVE + \mu_1$	1^b
$ROA_i = \beta_0 + HCE_{i1} + SCE_{i2} + CEE_{i3} + ATO_{i4} + LVE_{i5} + PCI_{i6} + \mu_2$	2^a
$EP_i = \beta_0 + HCE_{i1} + SCE_{i2} + CEE_{i3} + ATO_{i4} + LVE_{i5} + PCI_{i6} + \mu_2$	2^b

Table 2: DESCRIPTIVE STATISTICS

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	60	0.020	0.295	-1.002	1.011
EP	60	5.14e+07	6.34e+07	234146.3	3.08e+08
HCE	60	8.628	18.263	-0.080	107.526
SCE	60	-3.173	23.026	-169.422	36.495

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[7] As discuss by Samuel Kai Wah Chu, Chan K.H, Ka Yin Yu, Hing Tai Ng, and Wai Kwan Wong. An Empirical Study of the Impact of Intellectual Capital on Business Performance (2010)

CEE	60	0.447	0.437	-0.0708	2.166
VAIC	60	5.902	30.788	-169.411	109.075
ATO	60	0.679	0.641	0.011	2.712
LVE	60	-0.082	0.346	-1.259	0.564
PCI	60	0.385	0.063	0.230	0.496

Table 3: CORRELATION MATRIX

	ROA	EP	HCE	SCE	CEE	VAIC	ATO	LVE	PCI
ROA	1.0000								
EP	0.3561*	1.0000							
HCE	0.2657*	0.0907	1.0000						
SCE	0.0213	0.0924	0.0847	1.0000					
CEE	0.4812*	0.1626	0.6024*	0.1553	1.0000				
VAIC	0.1804	0.1252	0.6651*	0.8003*	0.4877*	1.0000			
ATO	0.4022*	0.0759	0.5498*	0.1626	0.9309*	0.4610*	1.0000		
LVE	0.6166*	0.2517	0.1197	-0.0270	0.1277	0.0527	0.0733	1.0000	
PCI	-0.2887*	-0.1535	-0.4125*	-0.2012	-0.5965*	-0.4036*	-0.6345*	0.0506	1.0000

Table 4: REGRESSION FOR MODEL 1

Variables	Model 1[a]	Model 1[b]
Independent variables	**Return on Assets (ROA)**	**Employees Productivity (EP)**
Value Added Intellectual Coefficient (VAIC)	-0.0004 (0.001)	163348.2 (301158.4)
Assets Turnover (ATO)	0.1262 (0.0582)**	-1.09e+07 (1.72e+07)
Leverage (LVE)	0.5166 (0.0801)***	4.87e+07 (2.37e+07)**
Physical Capital Intensity (PCI)	-0.7633 (0.5764)	-2.07e+08 (1.71e+08)
Cons	0.2732 (0.2494)	1.41e+08 (7.38e+07)*
N	60	60
Adjusted R²	0.4893	0.0345
F – statistic	15.13	1.53
Significant	0.0000	0.2070

Standard errors in parentheses

*P<.1, **P<.05 and ***P<.01

Table 5: REGRESSION FOR MODEL 2

Variables	Model 2[a]	Model 2[b]
Independent Variables	**Return on Assets (ROA)**	**Employees Productivity (EP)**
Human Capital Efficiency (HCE)	-0.0015 (0.0018)	-187334.3 (556837.1)
Structural Capital Efficiency (SCE)	-0.0005 (0.0012)	188501.5 (357744.6)
Capital Employed Efficiency (CEE)	0.4060 (0.1767)**	8.85e+07 (5.35e+07)
Asset Turnover (ATO)	-0.1118 (0.1188)	-6.13e+07 (3.59e+07)*
Leverage (LVE)	0.4901 (0.0790)***	4.36e+07 (2.39e+07)*
Physical Capital Intensity (PCI)	-0.7530 (0.5600)	-2.05e+08 (1.69e+08)
Cons	0.2564 (0.2424)	1.38e+08 (7.34e+07)*
N	60	60
Adjusted R²	0.5181	0.0478
F – statistic	11.57	1.49
Significant	0.0000	0.1983

Standard errors in parentheses

$*P<.1$, $**P<.05$ and $***P<.01$

Figure 1: COMPONENT OF ICE
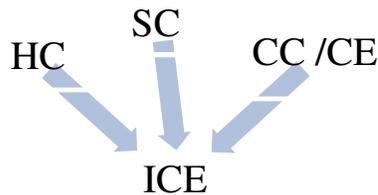
Source: Personal initiative
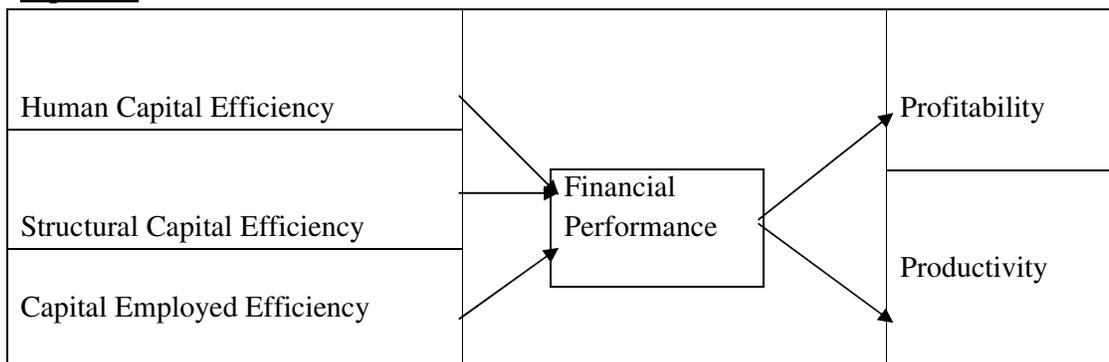
Figure 2: Theoretical Framework

Figure 3: **THE SUMMARY OF THE VARIABLE USED**

Variable type	Variable name	Variable definition
Dependent variable	Return on Assets (profitability) Employees Productivity (productivity)	○ ROA = Profit before tax / Total Assets or Average Total Assets ○ EP = Profit before Tax / Number of Employees
Independent variable	Value Added Intellectual Coefficient (VAIC) Human Capital Efficiency (HCE) Structural Capital Efficiency (SCE) Capital Employed Efficiency (CEE)	▪ VAIC = HCE + SCE + CEE ▪ HCE = VA / HC ▪ SCE = SC / VA ▪ CEE = VA / CE
Control variable	Physical Capital Intensity (PCI) Asset Turnover (ATO) Leverages (LVE)	• PCI = fixed assets /total assets • ATO = Turnover /total assets • LVE = Total debt / total assets

Source: Personal initiative