**EFFECTS OF INTELLECTUAL CAPITAL DISCLOSURE ON MARKET CAPITALIZATION OF LISTED**

**BANKS IN GHANA**

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**DECLARATION**

We hereby declare that this submission is our own work towards the Degree in Administration (Accounting) and that, to the best of our knowledge, it contains no materials previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgment has been made in the text.

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**DEDICATION**

We dedicate this work to God Almighty for the strength and knowledge He granted us to be able to complete this work. We also dedicate this work to our family and  friends for their encouragement and support throughout the programme. The final dedication of this work goes to our supervisor Mr. Abraham Osei-Wusu for putting in his all in supporting us from day one to the end the project may God richly bless him.

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**ABSTRACT**

Adequate disclosure in annual reports by public listed companies is very important to avoid information asymmetry and increase a firm's reputation. Therefore, the study examined the effects of intellectual capital disclosure on market capitalization of the listed banks in Ghana. The study used the annual reports and the share prices of five listed banks on the GSE from 2011 to 2015. **The data was analyzed through purposive sampling.** The results of the study indicate that there are both positive and negative significant effect of intellectual capital disclosure on market capitalization. Moreover the components of intellectual capital,thus human was found to be positively significant with market capitalization and both Structural and Relational are negatively significant on market capitalization. The study therefore recommends to the Security and Exchange Commission (SEC) and the Ghana Stock Exchange (GSE) to work toge with the Institute of Chartered Accountants Ghana (ICAG) the accounting regulatory body in the country, perhaps, to develop guidelines or framework on IC disclosure in order to enhance the adequacy of such disclosures.

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| CIV | Calculated Intangible Value |
| EC | External Capital |
| EVA | Economic Value Added |
| FASB | Financial Accounting Standard Board |
| GSE | Ghana Stock Exchange |
| HC | Human Capital |
| IASB | The International Accounting Standards Board |
| IC | Intellectual Capital |
| ICD | Intellectual Capital Disclosure |
| INC | Internal Capital |
| KCE | Knowledge Capital Earnings |
| MCAP | Market Capitalization |
| RC | Relational Capital |
| ROA | Return on Asset |
| SC | Structural Capital |
| VAIC | Value Added Intellectual Coefficient |
| VIF | Variation Inflation Factor |

**CHAPTER ONE**

## 1.0 INTRODUCTION

## 1.1 BACKGROUND OF STUDY

Intellectual Capital plays an important role in the valuation of a firm. Interestingly the annual reports captures only the book value leaving the hidden value or the intellectual capital, (Edvinson). Intellectual Capital disclosure has [received] significant attention among academic and practitioners across the world, (Abeysekera and Guthrie, 2004). For developing countries like Ghana, IC is recognized as a vital asset and value creator to Banks in gaining a key source of competitive advantage compared to its competitors. (Huang et.al, 2013). In spite of its importance in the wealth creation, International Financial Reporting Standard (IFRS) exclude the reporting for those intellectual capital assets in the financial statements of firms. As a result, IC information may not be adequately reported to the stakeholders partly due to strict recognition criteria for intangible assets that do not allow intellectual resources to be shown as an asset in the statement of financial position (Tayles et al., 2007). This brings information asymmetry.

Intellectual capital (IC) is significant contributor in the value creation process of an enterprise. It plays a key role in strengthening an enterprises competitive position and making sustainable profit. In the last decade, India has been transiting from an industrial manufacturing-based economy to knowledge based economy. With such a transition taking place, the companies find that the future sales and growth are not dependent on the tangible assets that they possess but the intangible assets like brand, technology, innovation, knowledge, research & development, customer satisfaction etc.

The use of intellectual capital (IC) includes advanced knowledge in the organization, use of intangible assets and human resources which lead to add value and gives a competitive advantage for the firms.

In this study we will examine the effects of the IC disclosure on market capitalization of listed Banks in Ghana.

## 1.2    PROBLEM STATEMENT

Intellectual Capital is a vital item in determining the worth of a firm but firms do not disclose this information in their reports. Intellectual Capital is seen as an important feature of business transactions and discourse. The increasing interests in Intellectual Capital Disclosure and Market Capitalization in both advanced and emerging economies have necessitated incisive studies.

Most intellectual capital reporting has been carried out in developed economies such as USA, UK, and Malaysia and they use content analysis as their methodology for the research. Some study done on intellectual capital and market capital lead in the USA by Mike Tayles, (2007); Orens et al. in UK by Richard H. Pike,(2007); and in Malaysia by Saudah Sofian,(2007) and Anam et al,(2011). Abeysekera (2011) in Sri Lanka, Most of these studies done obtained results that showed a positive relationship between IC and market capitalization. Nevertheless, a few studies obtained negative and partial relationships.

The disclosure of intellectual capital on a firm's asset may or may not encourage investors to patronize the stocks of firms listed on the Ghana stock exchange, thereby having a positive or a negative effect on the firm's value. Thus, the author is motivated to replicate the study in the Ghanaian environment to ascertain whether adequate Intellectual Capital Disclosure by banks listed on the stock exchange impact positively or negatively on the market values of those banks.

Moreover, in Ghana, few studies have been done on Intellectual Capital Disclosure from different perspectives, such as Asare N, Onumah JM, Simpson SNY (2013); Asare, Arku and Onumah, (2014); Asare, Onumah and Otieku, (2015). However, none of these studies has been done in the area on Intellectual Capital Disclosure in the annual reports to analyze it effects on Market Capitalization of listed banks in Ghana. Thus, the current study is the first to examine

Intellectual Capital Disclosure on Market Capitalization of listed Banks in Ghana. It is therefore believed that the results of this study will fill the gap that exist in literature in the area of Intellectual Capital Disclosure on market capitalization of listed banks in Ghana.

## 1.3    OBJECTIVES OF THE STUDY

The main objective of the study is to look at the effects of Intellectual Capital Disclosure (ICD) on Market Capitalization on listed banks in Ghana.

### 1.3.1    KEY OBJECTIVES

- Effects of intellectual capital disclosure on banks' market capitalization.
- To determine the relationship between human capital on market capitalization.
- To determine the relationship between structural capital on market capitalization.
- To determine the relationship between relational capital on market capitalization.

## 1.4    RESEARCH QUESTIONS

The focus of this study is to analyze the effects of Intellectual Capital Disclosure on Market Capitalization of listed banks in Ghana. To achieve this aim, the study seeks to answer the following questions;

1. To what extent does Intellectual Capital Disclosure affect Market capitalization?
2. To what extent does Human Capital affect Market capitalization?
3. To what extent does Structural Capital affect Market capitalization?
4. To what extent does Relational Capital affect Market capitalization?

## 1.5    SIGNIFICANCE OF THE STUDY

The research seeks to help to some regulatory bodies in Ghana such as the Security and Exchange Commission (SEC), the Institute of Chartered Accountants – Ghana (ICAG) and the Ghana Stock Exchange (GSE) to develop comprehensive guidelines on the awareness, recognition and disclosure of Intellectual Capital on the financial statements. The development of strategies or background on Intellectual Capital disclosure will increase the confidence of investors on the Capital Market.  This will be able to improve clearness in the financial statement of Banks and also ensure reliability in the disclosure of their intellectual capital. If guidelines and framework for Intellectual Capital are disclosed by their regulatory bodies, the firms' value will be enhanced within the banking industry.

### 1.5.1    Banks listed on the stock exchange

The act of this framework is relevant because it can be a useful tool for firms to make adequate disclosure of information, especially banks under Ghana's stock exchange. As a result, banks will be equipped to disclose in their annual reports the intellectual resources they possess but which are hidden behind the book values. Consequently, banks that make maximum disclosures of their IC may witness appreciation of their market capitalization. This is because investors will understand the value creation process, in other words they will get to know how competent they are and that they have not wasted their resources in investing in their organizations.

### 1.5.2    Investors on the stock exchange

Sufficient Intellectual Capital Disclosure will allow investors to have more insight in the real value of a business. This IC disclosures will reveal the hidden value of the company so as to help investors in having prior notice as to which company's stocks to buy.

### 1.5.3   Relevance for the further studies

This study will assist future studies in the area of IC disclosure on market capitalization of listed banks in Ghana. Secondly, the study seeks to contribute towards the IC literature in Ghana, most importantly on the issue of the effects of ICD on the market value of listed banks in Ghana. Thirdly, to set as a standards and pave way for future researchers to advance further studies in the area.

### 1.6.   SCOPE AND LIMITATIONS OF THE STUDY

The study aims to investigate the effects of intellectual capital disclosure on market capitalization of five listed banks in Ghana which is very broad to be under taken within a short period of time (Six (6) months). In line for data accessibility, the research will be limited to five listed banks on the Ghana stock exchange with dependable result.

### 1.7 METHODOLOGY OF THE STUDY

Intellectual capital is used as unit of analysis to content analyze the annual report of a sample of 5 out of 8 banks over the period of 5 years which is from 2011 – 2015.  The research instrument for this study is data collection techniques.

The data which will be used in this study is a secondary data collected from Annual Reports Ghana and Ghana Stock Exchange Report (GSE) and was used for carrying out the study. The data was composed of all banks which were listed on the Ghana Stock Exchange (GSE)

The data was for the period between 2011 and 2015 and it included all the banks which were continually in business between 2011 and 2015.

## 1.8    ORANIZATION OF THE STUDY

The study will be organized in five chapters. Chapter one will entail the background of the study, statement of the problem, research objective, research questions, significance of the study, scope of the study and the organization of the study. Chapter two will contain literature review based on practical experience of other researchers. It will be arranged into themes based on the main area of study. Chapter three will be the description of the research methodology to gather the needed data for the research, it will also include the research design, population, sample techniques and many more. Chapter four involves data analysis, presentations and discussions. The last chapter which is the five will summarize the whole work along with conclusion and recommendations.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 INTRODUCTION

This chapter seeks to review materials in journals, books and other sources where significant information can be collected for the study. Section 2.1 attempts to provide definitions and explanations to intellectual capital. Section 2.2 discusses the components of intellectual capital comprising human, structural and relational intellectual capitals. Section 2.3 discusses the various measurements of intellectual. Section 2.4 attempts to review theoretical framework and perspectives of intellectual capital. Section 2.5 reviews prior empirical studies in the area and finally, Section 2.6 talks about the summary of the chapter.

## 2.1 The Concept of Intellectual Capital

The first time the concept of IC was utilized was in 1969, by John Kenneth Galbraith in a letter to Michael Kalecki (economist and writer) (Atalay and Anafarta, 2011; Hormiga, 2010). Tom Stewart popularize the concept in 1991, when Fortune Magazine published his articles, for instance "Brainpower: How intellectual capital is becoming America's most valuable asset" (Bontis, 1998; Sullivan, 1999). Stewart is noted to have focused his articles (as well as one of his books, 'Intellectual Capital, the New Wealth of Organizations') on how firms create value through their "brain power" i.e. Intellectual Capital (Sullivan, 1999). While various definitions of the concept have been used in the literature with time, there is still no standard definition of Intellectual Capital (Kaufmann and Schneider, 2004; Choong, 2008; An and Davey, 2010; Atalay and Anafarta, 2011; An et al., 2011a).

An et al. (2011a), define the concept in their study as the knowledge-assets that can create value for firms as well as achieve and sustain a competitive edge for them; also seen as a non-monetary asset that can generate future economic values in firms (Saleh, 2010). Such intellectual assets themselves, according to Bismuth and Tojo (2008), do not create value nor generate growth and development but need to be combined with other "factors of production". Studies around the world have possibly contributed to the excitement of arriving at an all-encompassing definition of the concept. Nonetheless, examining the various definitions and the components, it is obvious that most of them refer to intangibles and other assets that have become relevant in the value-creation processes of firms in the current knowledge economy that are not fundamentally disclosed in the conventional financial statements.

The focus of Intellectual Capital is on the resources of organizations which are clearly relevant in decision making as to the wealth-creating ability of the firm; whilst Intellectual Capital Disclosure, on the other hand, is about achieving full disclosure of these intangibles, thereby guaranteeing fairness and transparency through CARs. Therefore the disclosure of Intellectual Capital is to ensure that the firm has steady control of its value-creation intangibles and to enhance their transparency as well as facilitate their effective and efficient management.

In this study, Intellectual Capital is categorized in accordance with Edvinson and Sullivan's (1996) classification:

Organizational (Structural) Capital (OC or SC), Relational Capital (RC) and Human Capital (HC), which classification is used a lot in the literature. A definition of HC offered by Sonnier (2008) describes HC as the knowledge, skill, expertise/know-how, problem solving capacity, education, training, judgment, experience, abilities, and loyalty of the employees of the firm; represented as the collective capabilities of a company's workforce to solve customer and

operational problems (Phusavat et al., 2011). Riahi-Belkaoui (2003, p. 217) also described SC as "the knowledge that belongs to the organization as a whole in terms of technologies, inventions, data, publications, strategy and culture, structures and systems, organizational routines and procedures", while Hormiga, (2010) saw RC as the value generated by relationships not only with customers, suppliers or shareholders, but with all stakeholders, both internal and external. Intellectual assets are not always separately identifiable, but tend to be complementary and can overlap significantly (Bismuth and Tojo, 2008). A clear relationship exists between SC and HC; SC deals with the mechanisms and structures of the organization that can help support employees, the HC, in their quest for optimum intellectual performance and therefore overall business performance (Bontis, 1998). A good linkage between the two in the organization usually leads to value-creation for stakeholders. That is the reason an

individual or employee, according to Bontis (1998), can have a high level of intellect, but if the organization has poor systems and procedures by which to track his or her actions, the overall Intellectual Capital will not reach its fullest potential.

RC, as the name implies, brings the other two aspects of IC (i.e. HC and SC) together. Customarily, the firm in its quest to create value for its stakeholders can resort to developing its HC and SC. This will positively affect and develop the relations of the firm with stakeholders and eventually increase firm-value. Oftentimes HC is developed to satisfy the specific needs of stakeholders alongside improving the SC. Customer-service personnel provide good customer-service to clients/customers. Corporate managers, in order to avoid agency problems, also conscientiously strive to manage relationships with stakeholders, especially shareholders. Systems and procedures are from time to time enhanced to provide good services to stakeholders.

To Riahi-Belkaoui (2003), it may be inferred that only SC, which is owned by the firm, and is assumed not to be reproduced and shared, is the best approximation of IC. There is a limit to the extent at which a firm can claim ownership and control over HC and RC.

## 2.2     DEFINITIONS OF INTELLECTUAL CAPITAL

There is no generally accepted definition for IC (Marr et al., 2004). However, many have offered views that provide a general concept. Edvinson and Malone (1997) defined IC as "knowledge that can be converted into value." They also explained that the difference between market value and book value is the value of IC. Pulic (2000) included in IC, all employees abilities that create value addition. Itami (1987) argued that IC is an intangible asset which includes technology, brand name, customer loyalty, goodwill and copy rights. Sullivan (2000) defined IC as "knowledge that can be converted into profits.

 Stewart (1997) views IC as "knowledge, information, intellectual property, and expertise that can be used to create wealth". According to Bontiset.al (2000) IC means: working individuals and organizational knowledge that contribute together to sustain competitive advantage. He further elaborates that IC consists of human capital and structural capital.

Moore (1996) defines IC as customer capital, innovation capital, and organizational capital. Ross et al. (1997) define intellectual capital as a language for thinking, talking and doing something about the drivers of companies" future earnings. It includes relationships with customers and partners, innovation efforts, company infrastructure and knowledge and skills of organizational members Petty and Cuganesan (2005) assert that the term "intellectual capital" is often treated as being synonymous with "intangible assets".

According to Roos, Pike and Fernstrom (2005) "Intellectual Capital can be define as all nonmonetary and nonphysical resources that are fully or partially controlled by the organization and contribute to the organizations" value creation".

Marr and Schiuma (2001) define intellectual capital (IC) as "the group of knowledge assets that are attributed to an organization and most significantly contribute to an improved competitive position in this organization by adding value to the defined stakeholders".

Some researches and studies focused in defining IC on the intangible assets area that enable the organizations to perform their businesses .Edvinson and Stenfelt (1999), identify IC as intangible assets that characterized with non-physical substance, in addition to the uncertainty of expected future benefits because of the difficulty of predicting it's production life which lead to the difficulty of measuring and evaluating it. A definition of intellectual capital is offered by Brooking (1996). "Intellectual capital is the term given to the combined intangible assets which enable the company to function. Those assets includes knowledge , Research and development , brands , patent and other assets that contains property rights " , it is noticed on this definition that he didn't clarify the assets that contained the property rights .At the same context ,Bontis (1998) connected IC with value creation .

Younet et al., (1996) identify the IC in the context of the relationship between cause and effect "a group of abilities that is owned by a specific number of working individuals in the organization, which enable them to present their intellectual contributions (cause) to help the organization to increase its productivity and achieve high level of performance in comparison to identical organization (effect). This definition focuses on the human side (Human capital) without giving the same focus on other components.

Martinez and Garcia-Meca (2005) identify IC as the knowledge, information, property rights and experience that is use to create wealth. IC is presented by Al Khayal (2005, as cited by (Daher, 2011), as the frame arise from having unusual profits which exceed the range of normal profit from usual investment in the market. IC is defined by Klien, (1999) that it is the intellectual essence that is composed, owned and improved to produce assets with high value.

## 2.3    Components of intellectual capital

Components of intellectual capital consist of human capital, structural capital and relational capital. This classification is admitted in general.

### 2.3.1   Human Capital

Human capital is defined as the knowledge, skills, experience, intuition and attitudes of the workforce. Intellectual capital can be increased by increasing the capacity of each worker. Human capital is the knowledge, skill and capability of individual employees providing solutions to customers.

Human capital is the firm's collective capability to extract the best solutions from the knowledge of its people. It is important because it is a source of innovation and strategic renewal, whether it is from brainstorming in a research lab, daydreaming at the office, throwing out old files, re-engineering new processes, improving personal skills or developing new sales leads.

Individual competence is important for organizations. This is people's capacity to act in various situations. It includes skill, education, experience, values and social skills. People are the only true agents in business; all assets and structures, whether tangible physical products or intangible

relations, are the result of human action and depend ultimately on people for their continued existence.

People create knowledge, new ideas, and new products, and they establish relationships that make processes truly work. Unfortunately, when people leave, they take along their knowledge, including internal, external, formal, and informal relationships.

Intellectual capital - the commitment and competence of workers - is embedded in how each employee thinks about and does work and in how an organization creates policies and systems to get work done. It has become a critical issue for some reasons5:

 First, intellectual capital is a firm's only appreciable asset. Most other assets (building, plant, equipment, machinery, and so on) begin to depreciate the day they are acquired. Intellectual capital must grow if a firm is to prosper. A manager's job is to make knowledge productive, to turn intellectual capital into customer value.

 Second, knowledge work is increasing, not decreasing. Service generally comes from relationships founded on the competence and commitment of individuals.

Third, employees with the most intellectual capital have essentially become volunteers, because the best employees are likely to find work opportunities in a number of firms. This does not mean that employees work for free, but that they have choices about where they work and, therefore, essentially volunteer in a particular firm. Volunteers are committed because of their emotional bond to a firm; they are less interested in economic return than in the meaning of their work. Employees with this mind-set can easily leave for another firm.

Tapsell, Sherrill, Jul. 1998, Bontis, Nick, 1996, Sveiby, Karl-Erik, Jun. 1998,  Brenner Pamela M Jan 1999, Ulrich, Dave, Winter 1998.

Fourth, many managers ignore or depreciate intellectual capital. In the result of economizing, increased global competition, customers' higher requirements, fewer management layers, increased obligations, and pressures exacted from almost every other modern management practice, employees' work lives have not always changed for the better.

### 2.3.2   Structural Capital

This consists of a wide range of patents, concepts, models, and computer and administrative systems. These are created by the employees and are thus generally 'owned' by the organization, and adhere to it. Sometimes they can be acquired from elsewhere. Decisions
to develop or invest in such assets can be made with some degree of confidence, because the work is done in-house, or bought from outside. Also, the informal organization, the internal networks, the 'culture' or the 'spirit', belongs to the internal structure. The internal structure and the people together constitute what we generally call the 'organization'.
Structural capital is the firm's organizational capabilities to meet market requirements.
It involves the organization's routines and structures that support employees' quests for optimum intellectual performance and, therefore, overall business performance. An individual can have a high level of intellect, but if the organization has poor systems and procedures by which to track his or her actions, the overall intellectual capital will not reach its fullest potential.

According to Van Buren, structural capital consists of innovation capital (the capability of an organization to innovate and to create new products and services) and process capital (An

organization's processes, techniques, systems, and tools) Bassi, Laurie, J 1997, Plott, Curtis E, Humphrey John,  Sveiby, Karl-Erik  Bontis, Nick   Van Buren, Mark.

Structural capital, consists of an organizations strategies, internal networks, systems, databases, and files, as well as its legal rights to technology, processes, inventions, copyrights, trademarks, trade secrets, brands, and licenses.

Structural capital improves when organizations invest in technology and develop processes and other internal initiatives.

The structural capital of a firm consists of four elements:

1. Systems - the way in which an organization's processes (information, communication, decision-making) and outputs (products/services and capital) proceed.

2. Structure - the arrangement of responsibilities and accountabilities that defines the position of and relationship between members of an organization.

3. Strategy - the goals of the organization and the ways it seeks to achieve them.

4. Culture - the sum of individual opinions, shared mindsets, values, and norms within the organization.

There is a stronger linkage between strategy and culture than is generally assumed. In the beginning, an organization's culture acts as a powerful filter on its perceptions of the business environment and, thus, contributes to the shape of the business strategies that are adopted. Later, when specific strategies are in place, they cannot be successfully implemented if the culture does not shape the organization's behavior in ways that are congruent with these strategies.

The largest barrier to success in implementing change is the lack of fit between strategies and the

organization's structures and culture. Organizations often respond to their business environment by adopting new strategies and developing the structures and processes to make them work. Because the "culture" element tends to be more implicit, however, it is usually ignored. Management has relatively little understanding of how to intervene in order to make the necessary culture changes. Ultimately, the competitive advantages meant to be derived from new strategies and the accompanying organizational changes will not be realized if they are not supported by an organizational culture that is appropriately aligned.

An organization with strong structural capital will have a supportive culture that allows individuals to try, fail, learn and try again. A culture that unduly penalizes failure, will have minimal success.

### 2.3.3   External Capital

External capital is also named relational capital and customer capital.

External - relational capital refers to the organization's relationships or network of associates and their satisfaction with and loyalty to the company. It includes knowledge of market channels, customer and supplier relationships, industry associations and a sound understanding of the impacts of government public policy. Frustrated managers often do not recognize that they can tap into a wealth of knowledge from their own clients and suppliers.

Understanding better than anyone else what customers want in a product or a service, is what makes someone a business leader as opposed to a follower. Customer and supplier loyalty, target marketing, longevity of relationships and satisfaction are all measurable elements of this form of intellectual capital.

External Capital consists of relationships with customers and suppliers, brand names, trademarks and reputation. Some of these can be considered legal property.

Coca-Cola, for instance, is the world's most valuable brand name, worth about US$39 billion.

But customer capital will show up in complaint letters, renewal rates, cross selling, referrals and

the speed with which phone calls are returned.

External capital, defines an organization's vital external relationships.

The components of relational capital includes:

1. Supplier capital - the mutual trust, commitment, and creativity of key suppliers.

2. Alliance capital - reliable and beneficial partners.

3. Community capital - an organization's capabilities and reputation in its surrounding

community.

4. Regulatory capital - knowledge of laws and regulations as well as lobbying skills and

contacts.

5. Competitor capital - critical understanding and intelligence about competitors.

These relationships can only be managed; they cannot be controlled. Improvement in external

capital involves looking outside an organization's boundaries to such things as developing

relationships and trust with customers, suppliers, and surrounding communities. Knight, Daniel

J, Saint-Onge, Hubert Saint-Onge, Hubert, Tacit Knowledge Bontis.

## 2.4    CONCLUSION

There is a transformation continually in the world. People, organizations and

governments is affected by transformation. The idea of intellectual capital started a decade or

so ago, as two trends began to emerge:

1) The shift from production-based economies to service and knowledge-based businesses;

2) The notion of "the invisible balance sheet".

Intellectual capital has more value for organizations than physical assets. Knowledge has been recognized as a valuable resource by researchers. Intellectual Capital simply means the knowledge resources of an organization. Success of organizations depends on creating, discovering, capturing, disseminating, and measuring knowledge. If organizations enhance their organizational learning, they will increase their knowledge and intellectual capital. Learning suggests ongoing, never-ending and always changing. It is the foundation of adaptability and innovation. The economic value of learning is a given because of its role in most business decisions and transactions.


## 2.5    MEASUREMENT METHODS OF INTELLECTUAL CAPITAL

Intellectual capital management and assessment of its effects is not possible without its measurement. This measurement is a difficult task. Intellectual capital of a company is strictly related to the type of activity, business environment, history and culture of a given organization. It is a highly individualized category. Perhaps, a universal model or technique for evaluation of this capital will never be developed.

In the subject literature, as well as in practice of many companies numerous attempts to determine the value of this capital are taken. This is demanded by investors and the boards of capital partnerships. So far, the decisions made by them have not included or automatically estimated the effects of intellectual capital. Lack of reliable evaluation of this capital results in the fact that decisions on capital markets are particularly exposed to various types of

speculations. This applies in particular to knowledge-absorbing companies. This fact is proved by, for instance, considerable changes in the prices of shares of the web companies which in the last decade were characterized with exceptionally large range of changes of market capitalization values.

Some of the models and methods that have been adopted by firms across the globe to measure and report IC are Market Value added & Economic Value Added (MVA & EVA), Balanced score card, Tobins Q, Intangible assets monitor, Skandia navigator, IC index and IC statement.

 A very brief overview of the measures is presented below: Stewart (1991) defines MVA as the excess of market value of capital (both debt and equity) over the book value of capital. If the MVA is positive, the company has created wealth for its shareholders. (Ramana, 2004) Simplest of all measures, the difference is attributed to intellectual capital as its contribution to value creation.

Economic value added (EVA), developed by Stern Stewart & Company, is the difference between the firm's after-tax return on capital and its cost of capital. Stewart (1991) defined EVA as residual return that subtracts the cost of invested capital from net operating profit after tax. EVA is equal to the economic book value of the capital at the beginning of the year and the difference between its return on capital and cost of capital. The concept of EVA helps in understanding the value creation process. (Ramana, 2004).

Another measure of performance, Tobin's q, is the ratio of the market value of a firm's assets (as measured by the market value of its outstanding stock and debt) to the replacement cost of the firm's assets (Tobin, 1969). If a firm is worth more than its value based on what it would cost to

rebuild it, then excess profits are being earned. These profits are above and beyond the level that is necessary to keep the firm in the industry.

Balanced scorecard was originated to give managers and executives a more 'balanced' view of organizational performance. Kaplan and Norton describe the innovation of the balanced scorecard as "The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation" (Balanced scorecard Institute)

Intangible assets monitor is a method developed by Karl Sveiby for measuring intangible assets and particularly relevant for Knowledge Organizations. The monitor is a simple tool that displays indicators that indicate change, i.e. growth, and renewal as well as efficiency and stability measures. These measures may change with industry in which the firm operates and also the strategy adopted. The indicators related to external structure, internal structure and competence is provided which can be measured and reported. (Sveiby, 1996)

Skandia Navigator was developed by Leif Edvinson to measure and report intangibles at Skandia. The navigator gives the balanced overview between financial and non-financial dimensions. The navigator takes through five varied focus which are financial focus, customer focus, human focus, process focus, renewal and development focus and human focus and is used as a planning tool as well as follow-up tool. (Edvinson, 1997).

IC index first developed by Roos in 1997 is a well-accepted measure of reporting intellectual capital of firms and it shows how effectively the organization is using its IC. IC index seeks to identify key areas of focus that are vital for the organization and also provides an overall indicator of performance (OECD, 2003).

## 2.6    THEORITICAL FRAMEWORK

### 2.6.1   Stakeholders Theory:

Traditionally shareholders were considered as the group to whom the firm is accountable for its performance; over years Freeman brought in the concept of stakeholders that is a larger group which would be impacted by corporate decisions. He asks the basic question "for whose benefit and at whose expense should the firm be managed" (Freeman, 1984) Freeman and Reed (1983) distinguish two senses of stakeholder. The narrow definition includes those groups who are vital to the survival and success of the corporation.

The wide-definition includes any group or individual who can affect or is affected by the corporation. Stakeholders are defined usually to include shareholders, employees, customers, suppliers, competitors, lenders, government and communities; and groups representing environmentalists, the media, and consumer advocates (Clarkson, 1995); since the contribution of intangibles in the profit of firms is increasing, it is felt by management that the financial reporting should also include IC disclosure which would give the stakeholders a broader and correct picture of the true value of firm and performance.

### 2.6.2   Signaling Theory:

Signaling theory is concerned with how to address problems arising from information asymmetry in any social setting. It suggests that information asymmetry should be reduced if the party possessing more information can send signals to other interest-related parties. Signaling theory suggests that companies with a high quality should signal their advantages to the market. It not only helps in reassessing the value of firm but also reduces the cost of capital (Davey, 2011) Through the systematic literature review Bernard Marr & others were able to identify five main reasons as to why firms measure the Intellectual capital (Marr, 2003). These were:

1. To help organizations formulate their strategy;

2. Assess strategy execution;

3. Assist in diversification and expansion decisions;

4. Use these as a basis for compensation; and finally

5. To communicate measures to external stakeholders thus, it can be observed from the above reasons that firms that measure IC may not always prefer to disclose the IC and retain it only for internal use. The risks attached with disclosure such as losing out on competitive advantage, legal retaliation, regulatory interference, and the costs involved in measurement are some of the major reasons for the firms not communicating the IC to the external stakeholders.

### 2.6.3   Legitimacy theory:

 "Legitimacy theory is derived from the concept of organizational legitimacy, which has been defined by Dowling and Pfeiffer (1975, p. 122) as: "… a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which

the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy".

Legitimacy theory posits that organizations continually seek to ensure that they operate within the bounds and norms of their respective societies. In adopting a legitimacy theory perspective, a company would voluntarily report on activities if management perceived that those activities were expected by the communities in which it operates (Deegan 2002; Deegan, Rankin and Voght 2000; Cormier and Gordon 2001, Cuganesan, 2007) The propagators of this theory view corporate reporting as an exercise of legitimizing the activities of corporation and validating the same within the given social environment.

## 2.7    REVIEW OF EMPIRICAL EVIDENCE

Using empirical evidence, they argue that stock market valuations are influenced by the extent and type of information on IC that is publicly disclosed.

According to Whiting and Miller (2008) firms with high levels of IC may invariably include them in their annual accounts in order to satisfy the information demands of current and potential investors, hence maintaining or attracting valuable resources. Similarly, Riahi-Belkaoui (2005) suggests that investors may greatly benefit from knowledge of the extent to which the human assets of an organization have increased or decreased during a given period. In addition, Bismuth and Tojo (2008) propose that although the pressure from investors for improved disclosure is at an early stage in many markets, it could become a driving force in pushing firms to reconsider calls for an increased disclosure of forward-looking information about their ICs Competitors are almost always looking at how the firm operates and the kinds of assets that are facilitating the firm's operations to enable them develop their own strategies to compete effectively.

The competitor also makes use of the company's annual reports, at least, to ascertain the financial performance and position of the company. It is not clear whether competitors in Ghana make use of the IC information in the annual reports, but it is obvious that the kind of IC assets controlled or owned by the company will help competitors in formulating their strategies, to either catch up or consolidate their position in the market.

The workforce or employees with diverse qualifications contribute significantly to the production process. They tend to benefit from on-the-job training and external training (e.g. short courses) usually sponsored by firms. This presupposes that organizations in one way or the other invest or contribute immensely to the growth and development of their human resources.

The employees typically treasure the systems, processes and relations with customers and other stakeholders that facilitate their work and have become conventional in the affairs of the firm. All these attest to the critical nature of the IC of the firm. It can be inferred that employees would expect the firm to report on its IC to whet their appetite in working for the firm. Managers, with or without knowledge about the concept of IC, make decisions which are underpinned by the value of the company's IC (Marr and Chatzkel, 2004).

The ability to create economic value from IC is highly contingent on the management capabilities of firms and the implementation of appropriate business strategies; there is now significant empirical work to support the view that effective use of IC depends on the quality of management (Bismuth and Tojo, 2008). Managers are these days doing all they can to establish IC resources and ensure that they make use of it to guarantee that value is created for their firms. Managers are also becoming aware that reporting on their key assets, including the IC, could help attract investors and advance the basis for decision making of stakeholders. They also appreciate the fact that ICDs could influence management decision making, particularly in key

business transactions. Nevertheless managers ought to streamline their disclosure policies and strategies well; as the ICD practice is not guided by standards.

A reduction of management flexibility might result from extensive ICD (Bru¨ggen et al., 2009). At the same time, the information released by the company may lead to the compromise of sensitive strategic information that would give unfair advantage to others (Bontis, 2002). The relevance and quality of ICDs in the CARs to product-buying decisions is an issue for in-depth interrogation. Customers are vital in the affairs of a company's operations. They form the core stakeholder group in terms of supply of revenues to the firm. Clients/customers are perhaps seen as also one of the most sensitive stakeholders that firms always have to deal with. Consumers' knowledge about the IC of the firm sometimes influences their preference for products especially with the service-oriented products.

Only by addressing the concerns of current customers through disclosure of IC can organizations succeed in creating value. This is because IC is now recognized as the pivotal driver behind value creation in many private and public sector organizations regardless of whether they have an industrial or service base (Lee et al., 2007). Suppliers are most of the time interested in establishing good business relationships with those firms or clients/customers they supply to.

They tend to look beyond a one-off transaction with firms and look at how they can replicate sales to clients/customers. It is quite obvious that the clients/customers' organizational systems, processes, human competencies and relation between them and the suppliers in business circumstances foster quality of operations and more especially business transactions. Government, usually acting as a regulator, will ensure that firms operate with certain caliber of employees and systems before granting accreditation and license to carry out certain businesses depending on the nature of the industry. For instance universities and banks are required to

operate with employees of certain qualifications, competencies and experience. Government

cannot customarily assess some of these issues from the traditional and formally required

financial statements. And this usually calls for additional reports to governments when assessing

these issues. Embedded in these reports are IC matters. Some institutions in one way or the other

act as regulators in this regard sometimes under the ambiance of government: Bank of Ghana

(BOG), Institute of Chartered Accountants – Ghana (ICAG), Securities and Exchange

Commission (SEC) and many others.

# CHAPTER THREE

# RESEARCH METHODOLGY

## 3.0 INTRODUCTION

The chapter three will present the approach and techniques of the study. This study is to examine

the effects of Intellectual Capital on Market Capitalization among listed banks on the Ghana

Stock Exchange. This chapter will also discuss the study design, population of the study, size of

the sample and the technique used for the sample selection, and also the methods of data

collection and the technique for the data analysis.

**3.1 STUDY DESIGN**

The study adopted explanatory research design which differentiates between the relationships among variables. Five banks among many listed banks on the Ghana stock exchange are selected with at least five years annual reports (2011 to 2015). The annual report selected within the period of five years are assumed to bring understanding to IC issues with the perception that it can assist them to achieve competitive advantage. For this reason, these listed banks are more likely to make more disclosure than unlisted companies. The study will look at three different variables which are the dependent, independent and control variables.

The dependent variable includes MCAP whilst IC (Human IC, Structural IC and Relational IC) is an independent variable. Some control variables are included in the model to allow for solid relations to be established through regressions.

**3.2 STUDY POPULATION**

There are a number of banks listed on the Ghana stock exchange but this study will limit it population to only five (5) listed banks on the GSE. There are eight bank currently listed on the Ghana stock exchange and this study choose only five of them because those banks are more likely to disclose their information. The disclosure of information of the selected banks is perceived to help them gain competitive advantage.

**3.3 SAMPLE SIZE AND SAMPLING TECHNIQUE**

The banks listed on the GSE are used in this study to examine the effects of IC on MCAP. The study also focuses on only five listed banks on the stock market. Banks with complete data for a twelve month accounting year were considered from 2011 to 2015.

**jyy3.4 DATA COLLECTION METHODS**

The researcher obtains the data used for the purposes of achieving the objective of this study from different sources including the fact book of the GSE, the official websites of Annual Reports Ghana. Subsequently, data for the period 2011 to 2015 is extracted from the annual reports of the sampled firms whilst the month-end stock prices for the same period for all the sampled banks are collected from the marketing department of the GSE.

**3.5 MEASUREMENT OF VARIABLES**

The variables adopted in the research include market capitalization which is the dependent variable and intellectual capital. The IC is divided into three components which include Human Capital, Structural Capital and Relational Capital. To avoid the influences of other factors on market capitalization, the study includes other control variables that are not related to IC, which is consistent with prior study, (MJ Van Dventer., 2004). The measurement of the variables is discussed below;

**3.5.1 Market Capitalization**

Luthy (1998) recommended classifications that are an extension to the measurement of the variables into these categories and they are Market Capitalization Method, Direct Intellectual Capital Method, The Balanced Scorecard Method and Return on Assets Method as it relates to the VAIC methodology.

The reflection of the actual value of companies on the Ghana stock exchange is measured with an indicator called market capitalization index. The index increased the reliability of the MCAP method since the value creation of the banks is dependent on the resources and infrastructure, which contribute to increase cash flow and enhance the competitive advantage (ALShubiri, 2015). Therefore, the dependent variable in the regression model is the MCAP and MCAP can

be measured by the value of owners' equity, which is calculated by multiplying its share price by the number of share existing at the end of the accounting period (Hussey 1999; Ibrahim et al., 2004), as cited in Anam et al., (2011).

The MCAP in this study for the years 2011 to 2015 were obtained from Ghana Stock Exchange.

### 3.5.2 Intellectual Capital

IC is measured with content analysis which is undertaken on the annual reports of five listed banks from 2011 to 2015. The indicators of HC, SC and RC represent the intellectual capital disclosure. A disclosure index that is developed by Wagiciengo and Belal's (2012) study as cited in Asare et al., (2013) was used to measure IC disclosure. A modification of their framework is performed to suit the Ghanaian regulatory environment. It is assumed that each of the bank's entire annual report is analyzed but the Chairman's and the Managing Directors' reports are the main areas where IC is disclosed. A dichotomous scoring system is adopted, where "1" is assigned when an indicator in the index is disclosed in the annual report and "0" where no disclosure is made as measured in prior studies (Omar, 2008 and Abdulmohammadi, 2005). Milne and Adler (1999) speculate that the sentence is the recording unit for the analysis as cited in Woodcock and Rosalind (2009).

### 3.5.3   Control Variables

Other variables apart from the independent variables such as book value and return on asset, firm size, net profit and leverage as found by prior studies (Abdulmohammadi, 2005 and Anam et al., 2011). Abdulmohammadi (2005) are included in the regression model because of their plausible effect on MCAP. For the purposes of this study, the researcher will include age, net profit and leverage. These control variables are included in the regression model because of their importance in the determination of MCAP in the Ghanaian economic environment.

(a) Net profit (NETPROFT) represents the net profit of the firm at the end of the accounting year (Citron et al., 2005; Zuliana, 2007; Orens et al., 2009 and Anam et al., 2011).

(b) Size represents the total assets of the firm at the end of the accounting year.

(c) Leverage (LEVERAGE) is measured as a ratio of total liabilities to shareholders' equity, (Anam et al. 2011; Omar, 2008 and Williams, 2001).

## 3.6 DATA ANALYSIS PROCEDURES

The data analysis procedures deal with the analysis of collected data in an attempt to fulfill the study objectives.

To fully understand how data are generally and statistically distributed, a descriptive analysis is used. Summing up, a statistics such as means, medians, and standard deviations are computed for both full and various sub-samples. Next to the descriptive analysis is the correlation analysis to ascertain how independent variables correlate with each other. The study also produces correlation matrix for all dependent, independent and control variables. Finally, multiple ordinary least square regression analysis is performed to obtain associations of the dependent, independent and the control variables. Content analysis of a qualitative approach will also be employed.

## 3.7     MODEL JUSTIFICATION

The objective of this study is to examine whether disclosure of IC has an effect on MCAP of five listed banks in Ghana. Given that the basis of the relationships to be analyzed involves a cause and an effect, the ordinary least square (OLS) estimation technique is employed in the study. This is done consistent with Abdulmohammadi, 2005; (Citron et al., 2005; Orens et al., 2009; Abeysekera, 2011) cited in Anam et al., 2011. They equally studied the effect of IC disclosure on MCAP. However, before the analysis is performed, a number of linear regression diagnostic tests are performed to ensure that the basic assumptions are met. For example, the heteroscedasticity test is performed using the Breusch-Pagan test and the results indicate that the variance of the variables adopted in the study are homoscedastic since the P-value recorded is not significant. The normality of the data utilized for the study is also tested by performing the Shapiro-Wilk test for normal data while the variance inflation factor analysis is also performed to test for multicollinearity. The results obtained after performing the various tests indicate that the OLS is suitable to be adopted for the purposes of this study.

## 3.8     RESEARCH CONTEXT

The research seeks to find out the behavior of investors on the GSE about the IC disclosures the five selected listed banks make in order to make a contribution to the extant literature on the effects of IC on MCAP. There have been numerous studies done in the subject area largely in the developed economies. For Abdulmohammadi (2005) in the USA, Orens et al., (2009) in continental European countries and Anam et al., (2011) in Malaysia. It is inappropriate to generalize the results of the study to only Ghana due to factors such as development of standards

regarding the disclosure of IC in those individual countries and differences in economic arrangement existing between Ghana and those countries. For example, in Malaysia, the National Annual Corporate Report Awards (NACRA) was introduced to encourage and improve on the level of disclosure of information made by the companies. Again, financial reporting standard (FRS) 138 has significantly affected the level of IC disclosures made by the Malaysian companies. Even though, Ghana has adopted the IFRS, none of the standards developed by the IASB gives a detailed accounting treatment and disclosure of the IC.

Moreover, the issue of IC disclosure is not so popular among accounting practitioners and investors on the GSE in Ghana and therefore the study is conducted to ascertain the effect of IC on MCAP. Banks on the stock market in Ghana are the focus of the study because such banks are more likely to disclose more information than the unlisted banks.

It is also assumed that such these selected banks appreciated issues of IC especially from the perspective that it could help them gain competitive advantage although IC disclosure in Ghana is yet to be fully embraced by accounting practitioners and investors.

**Chapter Four**

**Data Presentation, Analysis and Discussion**

## 4.0 INTRODUCTION

The chapter presents and discusses the results obtained following the analysis of the data collected from the selected samples. Section 4.1 discusses the descriptive statistics of all variables employed in the study whereas the correlation and variance inflation factors for the multicollinearity test are considered under sub-section 4.2.1. Again, sub-sections 4.2.2 and 4.2.3 consider the normality test of the data utilized for the analysis and the heteroscedasticity test respectively. Section 4.4 looks at the results obtained from the analysis and discussions with prior literature.

## 4.1 DESCRIPTIVE STATISTICS

The variables employed are considered in this section of the study. The common measures of central tendencies such as the mean, standard deviations, maximum and minimum are presented.

**Table 4.1 Descriptive Statistics of Dependent and Independent Variables**

| Variable | Mean | S.D | Minimum | Maximum |
|----------|------|-----|---------|---------|
| MCAP | 2.813 | 0.207 | 2.471 | 3.092 |
| HC | 0.676 | 0.121 | 0.327 | 0.787 |
| SC | 0.728 | 0.058 | 0.476 | 0.787 |
| RC | 0.726 | 0.446 | 0.666 | 0.787 |
| SIZE | 1.026 | 0.586 | 0.959 | 1.12 |
| BVALUE | 2.667 | 0.193 | 2.437 | 2.965 |
| NET PROFIT | 2.573 | 0.202 | 2.282 | 2.875 |
| LEVERAGE | 3.104 | 4.511 | -0.353 | 20.467 |

**SOURCE: Generated by STATA 2013**

As can be seen from Table 4.1 above, the mean average of MCAP is 2.814 with minimum and maximum values of 2.471 and 3.092 respectively. HC recorded a mean of 0.676 and its associated minimum value of 0.372 and maximum of 0.787, whereas SC and RC recorded mean averages of 0.727 and 0.726 and their associated minimum values 0.476, 0.666 each and maximum values of 0.787 each respectively. Size recorded a mean average of 1.026 with minimum and maximum values of 0.959 and 1.12 respectively. Net profit also recorded a mean

value of 2.573 with minimum of 2.282 and maximum value of 2.875 whereas leverage recorded

a mean average of 3.104 with minimum and maximum values of -0.353 and 20.467 respectively.

The MCAP of 2.814 indicates that the average capitalization of the selected firms listed on the

stock exchange is GH¢ 28,140 billion.

Out of the ten indicators to be disclosed under each of the component of IC, an average of 10

were disclosed under HC, SC and RC respectively. This therefore shows all the component

where equally disclosed. However, the composite of the three components of IC (ie., EICD) has

an average disclosure of 10 with a minimum of 4 and 9 items disclosed at a time. The firms made

an average profit of GHS 245 million whilst the leverage of the banks on average is 15 percent.

**4.2 Relationship between Human Capital and Market Capitalization**

Table 4.2 reports the relationship between Relational Intellectual Capital (RC) and Market

Capitalisation (MCAP). The $R^2$ of 0.41 indicates that the model explains up to 41 percent of the

variation in market capitalization of listed companies in Ghana. All variables together influence

Market Capitalization significantly at 1%.

**Table 4.2 Relationship between Human Capital and Market Capitalization**

|  | Coefficient | Std. Error | T | Sig. |
|---|---|---|---|---|
| HC | -4.513 | 2.377 | -1.90 | 0.058 |
| SIZE | 0.516 | 0.495 | 1.04 | 0.297 |

| | Coefficient | Std. Error | T | Sig. |
|---|---|---|---|---|
| BVALUE | 1.53 | 3.16 | 0.48 | 0.629 |
| NETPROFIT | -2.37 | 1.23 | -0.19 | 0.848 |
| LEVERAGE | -0.303 | 0.105 | -2.89 | 0.004 |
| Con | 17.654 | 7.691 | 2.30 | 0.022 |

*R-Squared=0.41, \*\*\*= Sign./ at 1%, \*\*= Sign. |at 5%, Sig. at 10% Sig. F=0.000*

## 4.3 Relationship between Structural Capital and Market Capitalization

Table 4.5 reports the relationship between Relational Structural Capital (RC) and Market Capitalisation (MCAP). The $R^2$ of 0.41 indicates that the model explains up to 41 percent of the variation in market capitalization of listed companies in Ghana. All variables together influence Market Capitalization significantly at 1%.

**Table 4.3 Relationship between Structural Capital and Market Capitalization**

| | Coefficient | Std. Error | T | Sig. |
|---|---|---|---|---|
| SC | 0.988 | 0.49057 | 2.02 | 0.044 |
| SIZE | -2.379 | 1.657 | -1.44 | 0.151 |
| BVALUE | 5.185 | 1.784 | 2.91 | 0.004 |

| | Coefficient | Std. Error | T | Sig. |
|---|---|---|---|---|
| NETPROFIT | -2.405 | 0.885 | -2.72 | 0.007 |
| LEVERAGE | -0.510 | 0.086 | -5.87 | 0.000 |
| Con | 6.009 | 4.830 | 1.24 | 0.213 |

*R-Squared=0.41, \*\*\*= Sign./ at 1%, \*\*= Sign. /at 5%, Sig. at 10% Sig. F=0.000*

## 4.4 Relationship between Relational Capital and Market Capitalization

Table 4.4 reports the relationship between Relational Structural Capital (RC) and Market Capitalisation (MCAP). The $R^2$ of 0.41 indicates that the model explains up to 41 percent of the variation in market capitalization of listed companies in Ghana. All variables together influence Market Capitalization significantly at 1%.

## Table 4.4 Relationship between Relational Capital and Market Capitalization

| | Coefficient | Std. Error | T | Sig. |
|---|---|---|---|---|
| RC | -2.310 | 0.381 | -6.05 | 0.000 |
| SIZE | 1.027 | 1.064 | 0.96 | 0.335 |
| BVALUE | 0.292 | 0.264 | 0.23 | 0.817 |
| NETPROFIT | -0.782 | 0.630 | -1.24 | 0.214 |
| LEVERAGE | -0.283 | 0.629 | -4.51 | 0.000 |

| | | 25.321 | 3.354 | | 7.55 | 0.000 |
| Con | | | | | | |

R-Squared=0.41, ***= Sign./ at 1%, **= Sign. |at 5%, Sig. at 10% Sig. F=0.000

**Table 4.5 Correlation matrix of Dependent and Independent variables**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| **1. MCAP** | 1 | | | | | | | |
| **2. HC** | 0.0995 | 1 | | | | | | |
| **3. SC** | -0.0352 | 0.4158 | 1 | | | | | |
| **4. RC** | -0.4620 | 0.4871 | 0.000 | 1 | | | | |
| **5. NETPROFIT** | 0.4638 | 0.4227 | -0.0342 | -0.1358 | 1 | | | |
| **6. LEVEAGE** | -0.2610 | 0.4200 | 0.3163 | 0.4228 | -0.0688 | 1 | | |
| **7. SIZE** | 0.5162 | 0.4505 | -0.1170 | -0.1362 | 0.9123 | - | 1 | |

| | | | | | | 0.0751 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **8. BVALUE** | 0.4402 | 0.1326 | -0.0470 | -0.1536 | 0.9779 | -0.0783 | 0.9534 | 1 | | |

**Note:** The variables are defined in table 3.1. *, ** indicate the level of significance among the variables as 0.05 and 0.01 correspondingly.

From Table 4.5, it is seen that there is a positive relationship between HC and MCAP with a correlation coefficient of 0.099 with a very strong significance of less than 0.01. Again, SC and MCAP are negatively significant. Likewise, RC and MCAP also record a negative significant coefficient of -0.462. The composite of the three components of IC (EICD) is that HC is positively related to MCAP whereas SC and RC are also negatively related with coefficient of to MCAP. It can also be observed from the table that all the components of IC including the composite of the three components are highly significantly related with MCAP at the significance level of 0.000.

The control variables comprising Size and Net profit are positively significantly related with MCAP with coefficient of 0.5162 and 0.4638 respectively. However, leverage is negatively related with MCAP with a coefficient value of -0.2610.

**Table 4.6 Relationship between Intellectual Capital and Market Capitalization**

| | Coefficient | Std. Error | T | Sig. |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| IC | 3.740 | 1.650 | 2.27 | 0.023 |
| SIZE | 0.351 | 0.096 | 3.65 | 0.000 |
| BVALUE | -0.998 | 0.421 | -2.37 | 0.018 |
| NETPROFIT | 0.782 | 0.630 | 1.24 | 0.214 |
| LEVERAGE | -0.351 | 0.096 | -3.65 | 0.000 |
| Con | 3.100 | 2.611 | 0.12 | 0.905 |

**R-Squared=0.43, \*\*\*= Sign./ at 1%, \*\*= Sign. |at 5%, Sig. at 10% Sig. F=0.000**

From Table 4.6, the result shows that there is a positive significant relationship between EICD and MCAP with coefficient of 3.740 and P-value of 0.023. This simply means that EICD can be considered as a predictor of MCAP. Thus, the coefficient of 3.740 indicates that an increase in the composite of the IC will lead to a **3.1** percentage increment in MCAP. This suggests that investors are more interested in firms that disclose the indicators of all the components of IC. There are several reasons that can possibly explain the significant relationship between EICD and MCAP. First the disclosure of IC information in listed company's annual reports gives its stakeholders the ability to make understanding of the process of wealth creation, hence leading to a decrease in the misevaluation of the share prices of companies, and increases Market Capitalization. Second, there are several benefits for increases in market value of firms, therefore it creates incentive for companies to disclose more information of Intellectual Capital (Abdolmohammadi, 2005). Third, in line with theory on signaling, companies with good values

will make a signal of the fact by making more disclosure on IC information to its stakeholders in their annual reports.

The finding of the study is consistent with the findings by Abdolmohammadi, 2005; Orens et al., 2009; Abeysekera, 2011 and Anam, 2011. Perhaps, both the current and the prior studies employed the same methodology which may have accounted for the similarities.

The control variables including Size and Net profit are positively significantly related with MCAP. The coefficient of Size which is 0.351, simply means that an increase in the Size of a firm will lead to 35.1 percentage increment in the MCAP of that firm. The results therefore suggest that shareholders will witness a slight gain in their investment with banks that have advanced in Size than firms that have less assets. This suggests that the advanced the banks, the more return an investor is likely to get on his or her investment. The coefficient of net profit which is 0.782, means that an increase in net profit of a firm will lead to 78.2 percentage increase in MCAP. Therefore investors or potential investors should invest in banks that are profitable in order to experience a rise in their investments. On the other hand, Leverage is negatively related with MCAP with a coefficient of -0.351 and P-value of 0.000. This indicates that when a firms leverage (debt) increases, it will lead to a 35.1 percentage decrease in its MCAP. This means that is not attractive to invest in firms that are highly geared.

# CHAPTER FIVE

## SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 5.0 INTRODUCTION

This chapter seeks to discuss the summary of key findings, Conclusion and recommendations of the study.

### 5.1 SUMMARY OF KEY FINDINGS

We the authors seeks to summarize the key results obtained in order to fulfill each of the objectives outlined in chapter one.

### 5.1.1 The Relationship between Human Capital on Market Capitalization

The results indicate that HC is positively significantly related to MCAP. Thus the null hypothesis that there is no relationship between HC and MCAP was rejected. The results suggest that the human intellectual capital disclosure by the listed Banks in Ghana leads to increases in their market value. This clearly shows that investors value the disclosure information that the banks make on their human resources. This makes human capital a vital component of intellectual capital.

### 5.1.2 The Relationship between Structural Capital on Market Capitalization

SC is positively significant to MCAP. This indicates that adequate disclosure of structural intellectual capital has a great impact on the market values of the listed Banks in Ghana. The null hypothesis that there is no significant relationship between structural and market capitalization is therefore rejected. The finding of the study makes disclosure of structural capital a more valuable component of intellectual capital.

### 5.1.3 The Relationship between Relational Capital and Market Capitalization

The finding shows that RC is positively significant to MCAP. This indicates that relational intellectual capital disclosure made by listed Banks in Ghana is picked up by the market, hence the positive impact on their market valuation. The null hypothesis that there is no relationship between relational capital and market capitalization is therefore rejected. This makes relational capital very vital component of intellectual capital.

### 5.1.4 Effects of Intellectual Capital Disclosure on Market Capitalization

The finding shows that EICD (a composite of HC, SC and RC) and MCAP have a positive significant relationship. This indicates that the overall disclosure of intellectual capital is highly valued by investors of the Ghanaian Banks which eventually increase their market capitalization. Therefore, the banks are justified in their disclosure of intellectual capital as adequate disclosure of IC increases a bank's market value, therefore the null hypothesis that there is no effect of intellectual capital disclosure on market capitalization is rejected.

### 5.2 CONCLUSION

This study sought to examine the effect of ICD on market capitalization of listed banks in Ghana. A sample of 5 banks listed on the Ghana stock exchange was used in the study.

From the study, all the variables are positively correlated with MCAP except leverage. The finding also shows that human capital, structural capital and relational capital after controlling for size, net profit and leverage are positively significantly related to MCAP. Size and net profit are found to be positively significantly related to MCAP whilst leverage is negatively related to MCAP.

The composite of the three intellectual components (i.e. Human, structural and relational), ICD is also found to be positively significantly related to MCAP.

Thus, banks and firms on the GSE should be motivated to disclose more of their intellectual capital since the cost of such disclosure is compensated by the benefits that will be derived.

## 5.3 RECOMMENDATIONS

This section makes recommendations based on the findings of the study to stakeholders involved in preparation of firms' annual reports as a means to improve IC disclosure on market capitalization of listed banks in Ghana.

First, as there is no distinctive model/approach for ICD, various approaches have been adapted to measure and report IC in the specific context of the companies and industries; thus showing how disparaging the practice of ICD in annual reports is across the country.

There should be harmonization of the practices across the world by accounting standards.

Efforts by accounting regulatory bodies should be intensified in coming out with specific standards. Looking at the trend of ICDs by the companies that is improving but at a relatively low rate, the study recommends the need for accounting regulatory bodies and oversight agencies (local and global) to develop specific standards or guidelines on identifying, measuring and reporting IC in corporate annual reports to enhance market capitalization.

Secondly, the empirical evidence that there is a positive significant effect of intellectual capital on market capitalization should convince the listed banks on the Ghana Stock Exchange to

disclose more of the intellectual of any components, since such disclosure increase the market value of the firms.

Thirdly, investors are encouraged to purchase the shares of a listed firm that discloses more intellectual capital since their shares are more likely to appreciate than companies that disclose less intellectual capital as evident in the findings of the study.

Again, managers of listed banks on the other hand should continue to improve their disclosures by disclosing relevant and reliable information on IC for stakeholder use. In the light of these recommendations future research work could be undertaken to improve the ICD practices in Ghana.

Finally, a similar study could also be undertaken in unlisted companies and state owned enterprises. This current study looked at effects of intellectual capital disclosure on market capitalization of listed banks in Ghana. Future research may well be made to ascertain the quality of the disclosed IC and the willingness of management to make such disclosures in spite of its being primarily voluntary. The study focused on five years corporate annual reports.

Imminent research could extend the time period covered in order to observe the development of ICD over a longer period.

This study was limited to selected listed banks on the GSE. The result of the study therefore may not necessarily represent the general situation in all banks in Ghana.

**REFERENCES**

**Edvinson, L., & Malone, M. S. (1997). Intellectual capital: Realizing your company's   true value by finding its hidden brainpower.**

Abeysekera, I., & Guthrie, J. (2004). Human capital reporting in a developing nation. The British Accounting Review, 36(3), 251-268.

Wen, S., Huang, T., Zeng, Z., Chen, Y., & Li, P. (2015). Circuit design and exponential stabilization of memristive neural networks. Neural Networks, 63, 48-56.

Tayles, M., Pike, R. H., & Sofian, S. (2007). Intellectual capital, management accounting practices and corporate performance: perceptions of managers. Accounting, Auditing & Accountability Journal, 20(4), 522-548.

Chaki, M., Valderrama, R., FERNÁNDEZ-OCAÑA, A. M., Carreras, A., GÓMEZ-RODRÍGUEZ, M. V., LÓPEZ-JARAMILLO, J. A. V. I. E. R., ... & Corpas, F. J. (2011). High temperature triggers the metabolism of S-nitrosothiols in sunflower mediating a process of nitrosative stress which provokes the inhibition of ferredoxin–NADP reductase by tyrosine nitration. Plant, cell & environment, 34(11), 1803-1818.

Abeysekera, I. (2011). The relation of intellectual capital disclosure strategies and market value in two political settings. Journal of Intellectual Capital, 12(2), 319-338.

Asare, N., Onumah, J. M., & Simpson, S. N. Y. (2013). Exploring the disclosure of intellectual capital in Ghana: Evidence from listed companies. Journal of Accounting & Marketing, 2(3).

Asare, N., Arku, J. S., & Onumah, J. M. (2014). Intellectual capital disclosures in Ghana: the views of stakeholders.

Asare, N., Onumah, J. M., & Otieku, J. K. (2014). Industry Intellectual Capital Disclosure on the Ghana Stock Exchange. IUP Journal of Accounting Research & Audit Practices, 13(4), 36.

Seleim, A., Ashour, A., & Bontis, N. (2007). Human capital and organizational performance: a study of Egyptian software companies. Management Decision, 45(4), 789-801.

Sullivan, S. E. (1999). The changing nature of careers: A review and research agenda. Journal of management, 25(3), 457-484.

Kaufmann, L., & Schneider, Y. (2004). Intangibles: a synthesis of current research. Journal of Intellectual Capital, 5(3), 366-388.

Skiba, R. J., Simmons, A. B., Ritter, S., Gibb, A. C., Rausch, M. K., Cuadrado, J., & Chung, C. G. (2008). Achieving equity in special education: History, status, and current challenges. Exceptional Children, 74(3), 264-288.

Mathieu, E., Barratt, A. L., McGeechan, K., Davey, H. M., Howard, K., & Houssami, N. (2010). Helping women make choices about mammography screening: an online randomized trial of a decision aid for 40-year-old women. Patient education and counseling, 81(1), 63-72.

Atalay, M., & Anafarta, N. (2011). Enhancing innovation through intellectual capital: A theoretical overview. Journal of Modern Accounting and Auditing, 7(2), 202.

Whitehead, A. N. (2011). Science and the modern world. Cambridge University Press.

Cai, J., Ruffieux, P., Jaafar, R., Bieri, M., Braun, T., Blankenburg, S., & Müllen, K. (2010). Atomically precise bottom-up fabrication of graphene nanoribbons. Nature, 466(7305), 470.

Bismuth, A., & Tojo, Y. (2008). Creating value from intellectual assets. Journal of intellectual capital, 9(2), 228-245.

Edvinson, L., & Sullivan, P. (1996). Developing a model for managing intellectual capital. European management journal, 14(4), 356-364.

Sonnier, B. M. (2008). Intellectual capital disclosure: high-tech versus traditional sector companies. Journal of Intellectual Capital, 9(4), 705-722.

Phusavat, K., Comepa, N., Sitko-Lutek, A., & Ooi, K. B. (2011). Interrelationships between intellectual capital and performance: Empirical examination. Industrial Management & Data Systems, 111(6), 810-829.

Chen, M. C., Cheng, S. J., & Hwang, Y. (2005). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. Journal of intellectual capital, 6(2), 159-176.

Ochoa, M. E., Otero, J., Hormiga, C. M., & López, L. (2010). Perfil de morbilidad y mortalidad en Santander. Revista Del Observatorio de Salud pública de Santander, 5(2), 4-31.

Riahi-Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: a study of the resource-based and stakeholder views. Journal of Intellectual capital, 4(2), 215-226.

Marr, B., & Adams, C. (2004). The balanced scorecard and intangible assets: similar ideas, unaligned concepts. Measuring business excellence, 8(3), 18-27.

Pulic, A. (2000). VAIC™–an accounting tool for IC management. International journal of technology management, 20(5-8), 702-714.

Marr, B., Schiuma, G., & Neely, A. (2004). The dynamics of value creation: mapping your intellectual performance drivers. Journal of intellectual capital, 5(2), 312-325.

Lazonick, W., & O'sullivan, M. (2000). Maximizing shareholder value: a new ideology for corporate governance. Economy and society, 29(1), 13-35.

Yang, Z. (2007). PAML 4: phylogenetic analysis by maximum likelihood. Molecular biology and evolution, 24(8), 1586-1591.

Anam, O. A., Fatima, A. H., & Majdi, A. R. H. (2011). Effects of intellectual capital information disclosed in annual reports on market capitalization: evidence from Bursa Malaysia. Journal of Human Resource Costing & Accounting, 15(2), 85-101.

Moore, J. F. (1996). The death of competition: leadership and strategy in the age of business ecosystems (p. 297). New York: Harper Business.

Levine, R. (1997). Financial development and economic growth: views and agenda. Journal of economic literature, 35(2), 688-726.
Petty, R., & Cuganesan, S. (2005). Voluntary disclosure of intellectual capital by Hong Kong companies: examining size, industry and growth effects over time. Australian Accounting Review, 15(36), 40-50.

Pike, S., Fernström, L., & Roos, G. (2005). Intellectual capital: Management approach in ICS Ltd. Journal of Intellectual Capital, 6(4), 489-509.

Marr, B., & Schiuma, G. (2003). Business performance measurement–past, present and future. Management decision, 41(8), 680-687.

Edvinson, L., & Stenfelt, C. (1999). Intellectual capital of nations—for future wealth creation. Journal of Human Resource Costing & Accounting, 4(1), 21-33.

Brooking, A. (1996). Intellectual capital. Cengage Learning EMEA.

Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. Management decision, 36(2), 63-76.

Yus, F. (2018). Cyberpragmatics: Internet-mediated communication in context. John Benjamins Publishing Company.

García-Meca, E., Parra, I., Larrán, M., & Martínez, I. (2005). The explanatory factors of intellectual capital disclosure to financial analysts. European Accounting Review, 14(1), 63-94.

Brown, A., & AL-KHAYAL, Z. (2006). Validity and reliability of the Arabic translation of the child oral-health-related quality of life questionnaire (CPQ11− 14) in Saudi Arabia. International Journal of Paediatric Dentistry, 16(6), 405-411.

Emsley, J. (2011). Die Elemente. Walter de Gruyter.

Lee, M. C., Klien, E. M. C., Burke, W. J., Zhang, A. X., Riddolls, R. J., Kuo, S. P., ... & Isham, B. (1999). Augmentation of natural ionospheric plasma turbulence by HF heater waves. Geophysical research letters, 26(1), 37-40.

Akpinar, A. T., & Akdemir, A. (1999). Intellectual capital. In third European Conference (pp. 332-340).

Bontis, N. (1996). There's a price on your head: Managing intellectual capital strategically. Business Quarterly, 60(4), 40-46.

Sveiby, K. E. (2001). A knowledge-based theory of the firm to guide in strategy formulation. Journal of intellectual capital, 2(4), 344-358.

Gatta, G., Botta, L., Rossi, S., Aareleid, T., Bielska-Lasota, M., Clavel, J & Mallone, S. (2014). Childhood cancer survival in Europe 1999–2007: results of EUROCARE-5—a population-based study. The lancet oncology, 15(1), 35-47.

Ulrich, D. (1998). Intellectual capital= competence x commitment. Sloan management review, 39(2), 15.

Bassi, L. J. (1997). Harnessing the power of intellectual capital. Training & Development, 51(12), 25-31.

Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. Social science & medicine, 32(6), 705-714.

Di Girolamo, L., Bond, T. C., Bramer, D., Diner, D. J., Fettinger, F., Kahn, R. A., & Rasch, P. J. (2004). Analysis of Multi-angle Imaging SpectroRadiometer (MISR) aerosol optical depths over greater India during winter 2001–2004. Geophysical Research Letters, 31(23).

Tobin, J. (1969). A general equilibrium approach to monetary theory. Journal of money, credit and banking, 1(1), 15-29.

Sveiby, K. E. (1996). Transfer of knowledge and the information processing professions. European Management Journal, 14(4), 379-388.

Roos, J., Edvinson, L., & Dragonetti, N. C. (1997). Intellectual capital: Navigating the new business landscape. Springer.

Willms, J. D. (2003). Student engagement at school: A sense of belonging and participation: Results from PISA 2000. Publications de l'OCDE.

Hannan, M. T., & Freeman, J. (1984). Structural inertia and organizational change. American sociological review, 149-164.

Freeman, R. E., & Reed, D. L. (1983). Stockholders and stakeholders: A new perspective on corporate governance. California management review, 25(3), 88-106.

Clarkson, M. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. Academy of management review, 20(1), 92-117.

Rothberg, J. M., Hinz, W., Rearick, T. M., Schultz, J., Mileski, W., Davey, M. & Hoon, J. (2011). An integrated semiconductor device enabling non-optical genome sequencing. Nature, 475(7356), 348.

Marr, B., Gray, D., & Neely, A. (2003). Why do firms measure their intellectual capital? Journal of intellectual capital, 4(4), 441-464.

Prasad, A. (1994, July). The Uses and Limits of Ideology in the Management of Business-Society Tensions. In Proceedings of the International Association for Business and Society (Vol. 5, pp. 138-140).

Deegan, C. (2002). Introduction: The legitimizing effect of social and environmental disclosures–a theoretical foundation. Accounting, Auditing & Accountability Journal, 15(3), 282-311.

Deegan, C., Rankin, M., & Tobin, J. (2002). An examination of the corporate social and environmental disclosures of BHP from 1983-1997: A test of legitimacy theory. Accounting, Auditing & Accountability Journal, 15(3), 312-343.

Whiting, R. H., & Woodcock, J. (2009). Intellectual capital disclosures by Australian companies. AFAANZ Conference.

Whiting, R. H., & Miller, J. C. (2008). Voluntary disclosure of intellectual capital in New Zealand annual reports and the "hidden value". Journal of Human Resource Costing & Accounting, 12(1), 26-50.

Riahi-Belkaoui, A. (2005). Earnings opacity, stock market wealth effect and economic growth. Review of Accounting and Finance, 4(1), 72-91.

Bismuth, A., & Tojo, Y. (2008). Creating value from intellectual assets. Journal of intellectual capital, 9(2), 228-245.

Marr, B., & Chatzkel, J. (2004). Intellectual capital at the crossroads: managing, measuring, and reporting of IC. Journal of Intellectual Capital, 5(2), 224-229.

Brüggen, A., Vergauwen, P., & Dao, M. (2009). Determinants of intellectual capital disclosure: evidence from Australia. Management decision, 47(2), 233-245.

Bontis, N., Crossan, M. M., & Hulland, J. (2002). Managing an organizational learning system by aligning stocks and flows. Journal of management studies, 39(4), 437-469.

Van Deventer, M. J. (2002). Introducing intellectual capital management in an information support services environment (Doctoral dissertation, University of Pretoria).

Luthy, D. H. (1998, August). Intellectual capital and its measurement. In Proceedings of the Asian Pacific Interdisciplinary Research in Accounting Conference (APIRA), Osaka, Japan (pp. 16-17).

Jamil, S. A., Al Ani, M. K., & Al Shubiri, F. N. (2015). The effect of working capital management efficiency on the operating performance of the industrial companies in Oman. International Journal of Economics and Financial Issues, 5(4).

Anam, O. A., Fatima, A. H., & Majdi, A. R. H. (2011). Effects of intellectual capital information disclosed in annual reports on market capitalization: evidence from Bursa Malaysia. Journal of Human Resource Costing & Accounting, 15(2), 85-101.

Wagiciengo, M. M., & Belal, A. R. (2012). Intellectual capital disclosures by South African companies: A longitudinal investigation. Advances in Accounting, 28(1), 111-119.

Abdulmohammadi, M. J. (2005). Intellectual capital disclosure and market capitalization. Journal of intellectual capital, 6(3), 397-416.

Milne, M. J., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosures content analysis. Accounting, Auditing & Accountability Journal, 12(2), 237-256.

Woodcock and Rosalind (2009)

Nikolaj Bukh, P., Nielsen, C., Gormsen, P., & Mouritsen, J. (2005). Disclosure of information on intellectual capital in Danish IPO prospectuses. Accounting, Auditing & Accountability Journal, 18(6), 713-732.

Oliveira, L., Lima Rodrigues, L., & Craig, R. (2006). Firm-specific determinants of intangibles reporting: evidence from the Portuguese stock market. Journal of Human Resource Costing & Accounting, 10(1), 11-33.

Selvarajan, T. T., Ramamoorthy, N., Flood, P. C., Guthrie, J. P., MacCurtain, S., & Liu, W. (2007). The role of human capital philosophy in promoting firm innovativeness and performance: Test of a causal model. The International Journal of Human Resource Management, 18(8), 1456-1470.

Bozzolan, S., Favotto, F., & Ricceri, F. (2003). Italian annual intellectual capital disclosure: An empirical analysis. Journal of Intellectual capital, 4(4), 543-558.

Abdulmohammadi, M. J. (2005). Intellectual capital disclosure and market capitalization. Journal of intellectual capital, 6(3), 397-416.

Anam, O. A., Fatima, A. H., & Majdi, A. R. H. (2011). Effects of intellectual capital information disclosed in annual reports on market capitalization: evidence from Bursa Malaysia. Journal of Human Resource Costing & Accounting, 15(2), 85-101.

Orens, R., Aerts, W., & Lybaert, N. (2009). Intellectual capital disclosure, cost of finance and firm value. Management Decision, 47(10), 1536-1554.

Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. Contemporary accounting research, 11(2), 661-687.